

Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
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Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
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	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
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	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
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10-	The teeth in frog are meant for:	nr.	ring d-Cutting
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TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

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3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
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	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
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7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
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10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You kin trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrong one;
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	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the contract of
	e eggs of lampreys are Teloleithal		
IAF. I	n frog stomach is U shaped		



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
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-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
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In brackish water ponds there is a system of		1983.	
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In culture in recirculatory system, water is			
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recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			•
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
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- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
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- Sites should be selected for fish farms only where water of the required		- Transport of feed from the to the ponds and	l of the
2- Write on:- (10 Marks) (a) Different kinds of aquaculture. (b) Causes of mortality in fish transportation. 3-Mention only 5 of: (10 Marks) (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (10 Marks) (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.		to the holding ponds should involve short hau	ling distances.
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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
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8-	Intermediates between cephalochore	lates and ver	rtebrates:
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9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You kin trought the tollowing scatter	c-Tea	ring u-cuting
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O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
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	e eggs of lampreys are Teloleithal		
IAF. I	n frog stomach is U shaped		



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded frenvisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	





Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each	
	other().	
2-The ecosystem	Are the plants ().	
3- The limiting factor	Is killing and eating an individual of the same species().	
4- Range of tolerance	Are those which become active during day time ().	
5- Homeostasis	Are those which become active during night	
6-Monogamy	Are found on the top of food pyramid().	
7-Polyandry	The number of births in a given time period ().	
8-Birth rate	Depend on internal heat production().	
9- Homeotherms	The formation of a pair bond between one male and one	
	female().	
10- Mutualism	The individual female gains two or more males(
11-Producers	The range of the environmental conditions within which the organism can tolerate	
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate	
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment	
14-Nocturnal animals	Is the structural and functional unit studied in Ecology	
15- Carnivorous	An assemblage of populations in a given	
animals	area()	

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
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- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
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------End -------

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بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

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July 11:3

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Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

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	(NOTE: Exai	n in Two par	
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Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
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	is available.	
	2- Write on:-	(10 Marks)
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	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

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	other().	
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Q3: Give the reason (s):

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- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You kin trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrong one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de verenda en de el	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the contract of
	e eggs of lampreys are Teloleithal		
IAF. I	n frog stomach is U shaped		



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded frenvisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each	
	other().	
2-The ecosystem	Are the plants ().	
3- The limiting factor	Is killing and eating an individual of the same species().	
4- Range of tolerance	Are those which become active during day time ().	
5- Homeostasis	Are those which become active during night	
6-Monogamy	Are found on the top of food pyramid().	
7-Polyandry	The number of births in a given time period ().	
8-Birth rate	Depend on internal heat production().	
9- Homeotherms	The formation of a pair bond between one male and one	
	female().	
10- Mutualism	The individual female gains two or more males(
11-Producers	The range of the environmental conditions within which the organism can tolerate	
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate	
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment	
14-Nocturnal animals	Is the structural and functional unit studied in Ecology	
15- Carnivorous	An assemblage of populations in a given	
animals	area()	

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
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5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
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3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
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4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
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	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You kin trought the tollowing scatter	c-Tea	ring u-cuting
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	e eggs of lampreys are Teloleithal		
IAF. I	n frog stomach is U shaped		



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	•
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
	- Any existing line must be excluded frenvisaged for fish farm.	rom the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	•••••	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	and of the
	to the holding ponds should involve short l	hauling distances.
	- Sites should be selected for fish farms only where water of th	ie required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	,
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	aquaculture.
4-	-What are:	(10 Marks)
	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
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- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
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- 9- Holothuria belongs to Echinodermata.
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------ End ------

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
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5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
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	a- Endostyle	E. ox	Epipharyngeal groove
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	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	 b- Unpaired pronephron 		
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	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
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		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
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27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting
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it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas
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	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
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-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
- In static freshwater ponds, the water supply may be from		- Aquaclture is estimated to contribute tons in fisl	h production in
In brackish water ponds there is a system of		1983.	
In brackish water ponds there is a system of		- In static freshwater ponds, the water supply may be from	
In culture in recirculatory system, water is			
In culture in recirculatory system, water is		- In brackish water ponds there is a system of	to control the
recirculted, often after			
recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			· ·
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
envisaged for fish farm.		- Any existing line must be excluded from	the area
- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
Transport of feed from the			
Transport of feed from the		- The fish farm should be sited primarily in areas unsuited to oth	er
		uses.	
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Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

A-	Fill 1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain. Fishes spawn once during lifetime are known as	
	3.	Fishes spawn once during mediate are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	fichas
	6.	Fishes breed at regular intervals during a season within a year are known as	n hadu
	7.	Cyclostomata have one with no genital and release gametes into cavity.	body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	3. 10	Fishes of family spawn once after long, energy consuming migration.	
B-	La	bel the correct statement with True (T) and the incorrect one with False (F)	(5
_		arks):	
1		rowth rate of immature fish are much faster than those of mature fish.	()
2	le Le	positive allometric growth, the shape of fish does not change over time	()
3	. 11	the most highly evolved Elasmobranches, the anterior end of the premaxilla	()
J	 	evelops what's called an ascending process.	
4	٨	Aicropterus salmoides consumes food at 10C three times than that in 20C.	()
5	. F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6	Δ	Anguillidae and Salmonidae spawn more than once during their life.	()
7	-	Hagfishes could not perform as osmoconformers.	()
8	1	JaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9	. c	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
1	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
	İ	n osmoregulation.	
<i>C</i> -	C	hoice the correct answer of each list in the following (20 marks):	
•	-		

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	 b- Unpaired pronephron 		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrone one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the contract of
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
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-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
- In static freshwater ponds, the water supply may be from		- Aquaclture is estimated to contribute tons in fisl	h production in
In brackish water ponds there is a system of		1983.	
In brackish water ponds there is a system of		- In static freshwater ponds, the water supply may be from	
In culture in recirculatory system, water is			
In culture in recirculatory system, water is		- In brackish water ponds there is a system of	to control the
recirculted, often after			
recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			· ·
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
envisaged for fish farm.		- Any existing line must be excluded from	the area
- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
Transport of feed from the			
Transport of feed from the		- The fish farm should be sited primarily in areas unsuited to oth	er
		uses.	
- Sites should be selected for fish farms only where water of the required		- Transport of feed from the to the ponds and	l of the
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11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
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	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
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2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilla levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

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- 2- Animals which depend on internal heat production.
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- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrone one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the contract of
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded frenvisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	
	6.	Fishes breed at regular intervals during a season within a year are known as	fishes
	7.	Cyclostomata have one with no genital and release gametes int cavity.	o body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
1.	G	rowth rate of immature fish are much faster than those of mature fish.	()
2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilla levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
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- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exar	n in Two par	
1 (1	ionse th o best correct answ er :		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	 b- Unpaired pronephron 		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comp		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
4.0	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You's in trought the following scatter	c-Tea	ring u-cuting
		1.28	to me wrong one;
	h is an anamniote animal	- and at a	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas
	ic carmage surrounding the outcom to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the contract of
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

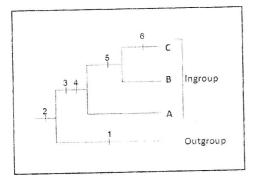
Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded fr envisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
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	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b) The criteria for selection of species for culture.	

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
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- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - ••
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

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C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes.......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You kin trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrone one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the comments
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
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-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
- In static freshwater ponds, the water supply may be from		- Aquaclture is estimated to contribute tons in fisl	h production in
In brackish water ponds there is a system of		1983.	
In brackish water ponds there is a system of		- In static freshwater ponds, the water supply may be from	
In culture in recirculatory system, water is			
In culture in recirculatory system, water is		- In brackish water ponds there is a system of	to control the
recirculted, often after			
recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			· ·
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
envisaged for fish farm.		- Any existing line must be excluded from	the area
- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
Transport of feed from the			
Transport of feed from the		- The fish farm should be sited primarily in areas unsuited to oth	er
		uses.	
- Sites should be selected for fish farms only where water of the required		- Transport of feed from the to the ponds and	l of the
2- Write on:- (10 Marks) (a) Different kinds of aquaculture. (b) Causes of mortality in fish transportation. 3-Mention only 5 of: (10 Marks) (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (10 Marks) (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.		to the holding ponds should involve short hau	ling distances.
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		-	

Good Luck

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

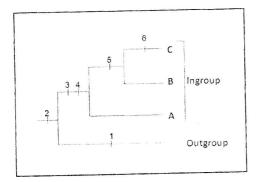
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
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- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
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- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
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11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
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- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
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- a) Less than 3
- b) Larger than 3
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Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

A-	Fill 1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain. Fishes spawn once during lifetime are known as	
	3.	Fishes spawn once during mediate are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	fichas
	6.	Fishes breed at regular intervals during a season within a year are known as	n hadu
	7.	Cyclostomata have one with no genital and release gametes into cavity.	body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	3. 10	Fishes of family spawn once after long, energy consuming migration.	
B-	La	bel the correct statement with True (T) and the incorrect one with False (F)	(5
_		arks):	
1		rowth rate of immature fish are much faster than those of mature fish.	()
2	le Le	positive allometric growth, the shape of fish does not change over time	()
3	. 11	the most highly evolved Elasmobranches, the anterior end of the premaxilla	()
J	 	evelops what's called an ascending process.	
4	٨	Aicropterus salmoides consumes food at 10C three times than that in 20C.	()
5	. F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6	Δ	Anguillidae and Salmonidae spawn more than once during their life.	()
7	-	lagfishes could not perform as osmoconformers.	()
8	1	JaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9	. c	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
1	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
	İ	n osmoregulation.	
<i>C</i> -	C	hoice the correct answer of each list in the following (20 marks):	
•	-		

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

١

Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes.......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You kin trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrong one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Committee	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de verenda en de el	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the comments
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded frenvisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

Good Luck

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
- Osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

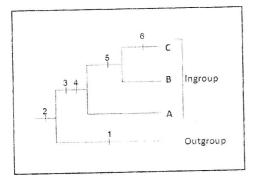
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

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e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding

34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of

- 21 -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

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- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

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Level:	

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- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
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- a) Cata- and ana-dromous migrtions
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- c) Water uptake
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Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	
	6.	Fishes breed at regular intervals during a season within a year are known as	fishes
	7.	Cyclostomata have one with no genital and release gametes int cavity.	o body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
1.	G	rowth rate of immature fish are much faster than those of mature fish.	()
2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilla levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes.......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You kin trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrong one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Committee	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is appriar cartifor
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the comments
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded frenvisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

Good Luck

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
- Osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acaminodians

- d) Osteichthyes
- e) none of the above

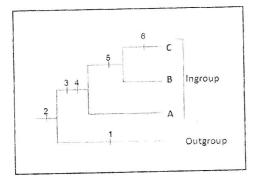
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28- In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - ••
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

Level:		
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	evel.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

A- Fill in the blank spaces (5 marks):1. The internal mechanism that regulates the process of reproduction is known a			
	2.	Gonadotropin-releasing hormones are secreted by of the brain. Fishes spawn once during lifetime are known as	
	3.	Fishes spawn once during mediate are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	fichas
	6.	Fishes breed at regular intervals during a season within a year are known as	n hadu
	7.	Cyclostomata have one with no genital and release gametes into cavity.	body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	3. 10	Fishes of family spawn once after long, energy consuming migration.	
B-	La	bel the correct statement with True (T) and the incorrect one with False (F)	(5
_		arks):	
1		rowth rate of immature fish are much faster than those of mature fish.	()
2	le Le	positive allometric growth, the shape of fish does not change over time	()
3	. 11	the most highly evolved Elasmobranches, the anterior end of the premaxilla	()
J	 	evelops what's called an ascending process.	
4	٨	Aicropterus salmoides consumes food at 10C three times than that in 20C.	()
5	. F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6	Δ	Anguillidae and Salmonidae spawn more than once during their life.	()
7	-	Hagfishes could not perform as osmoconformers.	()
8	1	JaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9	. c	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
1	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
	İ	n osmoregulation.	
<i>C</i> -	C	hoice the correct answer of each list in the following (20 marks):	
•	-		

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes.......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrone one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision
			int ivers or vigorical
 Exosketeton in lampreys is cartilaginous Muscles of trunk and tail in petromyzon are arranged in D shaped myotomes 			
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is appriar cartifor
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the comments
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
-----------	-----------	--------	------------

-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
- In static freshwater ponds, the water supply may be from		- Aquaclture is estimated to contribute tons in fisl	h production in
In brackish water ponds there is a system of		1983.	
In brackish water ponds there is a system of		- In static freshwater ponds, the water supply may be from	
In culture in recirculatory system, water is			
In culture in recirculatory system, water is		- In brackish water ponds there is a system of	to control the
recirculted, often after			
recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			· ·
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
envisaged for fish farm.		- Any existing line must be excluded from	the area
- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
Transport of feed from the			
Transport of feed from the		- The fish farm should be sited primarily in areas unsuited to oth	er
		uses.	
- Sites should be selected for fish farms only where water of the required		- Transport of feed from the to the ponds and	l of the
2- Write on:- (10 Marks) (a) Different kinds of aquaculture. (b) Causes of mortality in fish transportation. 3-Mention only 5 of: (10 Marks) (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (10 Marks) (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.		to the holding ponds should involve short hau	ling distances.
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3-Mention only 5 of: (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (a)The required geotechnical data for fish farm. (b)The important climatological factors needed for the site of fish farm. 5- Mention: (a)The desirable characteristics of aquaculture organisms.		(a) Different kinds of aquaculture.	
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(b)The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a)The desirable characteristics of aquaculture organisms.		(a)The required geotechnical data for fish farm.	()
5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.			farm.
(a) The desirable characteristics of aquaculture organisms.			
		(a) The desirable characteristics of aquaculture organisms.	,
		-	

Good Luck

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
- Osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

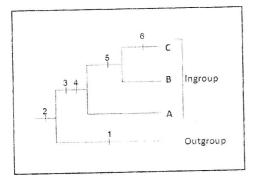
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - a -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	
	6.	Fishes breed at regular intervals during a season within a year are known as	fishes
	7.	Cyclostomata have one with no genital and release gametes int cavity.	o body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
1.	G	rowth rate of immature fish are much faster than those of mature fish.	()
2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilla levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

۲

- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each			
	other().			
2-The ecosystem	Are the plants ().			
3- The limiting factor	Is killing and eating an individual of the same species().			
4- Range of tolerance	Are those which become active during day time ().			
5- Homeostasis	Are those which become active during night			
6-Monogamy	Are found on the top of food pyramid().			
7-Polyandry	The number of births in a given time period ().			
8-Birth rate	Depend on internal heat production().			
9- Homeotherms	The formation of a pair bond between one male and one			
	female().			
10- Mutualism	The individual female gains two or more males().			
11-Producers	The range of the environmental conditions within which the organism can tolerate			
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate			
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment			
14-Nocturnal animals	Is the structural and functional unit studied in Ecology			
15- Carnivorous	An assemblage of populations in a given			
animals	area()			

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes.......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par		
1 (1	ionse th o best correct answ er		(10 degree)	
* ec	Scales in the sharks are:		-	
	a- Cycloid	C-	Placoid	
	b- Ctenoid	d-	Ganoid	
200	One of the following is converted into	o thyroid gla	and of vertebrates:	
	a- Endostyle	E. ox	Epipharyngeal groove	
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands	
3-	The thermoreceptor in branchioston	ia is:		
	a- Eye spots	C-	infnudibular organ	
	b- Cophalic pigments	ď-	Kollickers pit	
4-	Excretion in vertebrates takes place	by:		
	a- Unpaired kidney			
	b- Unpaired pronephron			
	c- Paired mesonephric kidneys			
	d- Paired mesonephric and meta	inephric kid	neys	
5-	The pineal organ in lampreys is:	27		
	a- Present immediately behind t			
	b- Present immediately behind t			
	c- Present between the eye and t	the nostril	•	
	d- Absent		, e 4 , B , W	
5-	Each gill pouch in petromyzon comm			
	a- Gill lamella	Ça	External gill slits	
	b- Gill arches		Internal gill slits	
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t	
	a- Forebrain		lindbrain	
	b- Midbrain		Viedulia oblongata	
8-	Intermediates between cephalochore	lates and ver	rtebrates:	
		is c-branchi	ostoma d- Ammocoete larva	
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas	
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane	
10-	The teeth in frog are meant for:	nr.	ring d-Cutting	
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting	
		1.28	to me wrone one;	
	h is an anamniote animal	n a mala da		
	e term vertebrata is synonymous to ci		than a raise	
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Committee	than 2 pans tha works of Ordovision	
			int ivers or vigorical	
O. MAR	 Exoskeleton in lampreys is cartilaginous Muscles of trunk and tail in petromyzon are arranged in D shaped myotomes 			
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas	
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted			
		TAN BUREFALLING	Signature and the comments	
	e eggs of lampreys are Teloleithal			
IAF. II	n frog stomach is U shaped			

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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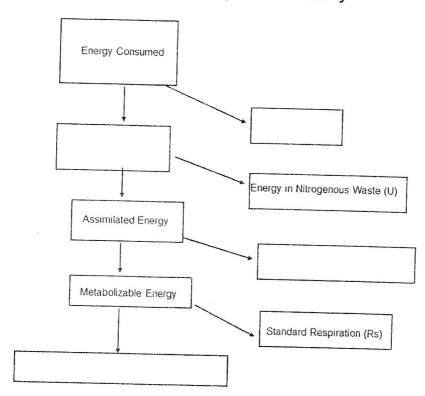
1-	Complete:-	(10 Marks)		
	-The term aquaculture refers to the cultivation of			
	- Aquaclture is estimated to contribute tons in	fish production in		
	1983.			
	- In static freshwater ponds, the water supply may be from	,		
	and			
	- In brackish water ponds there is a system of	to control the		
	and			
	- In culture in recirculatory system, water is	continuously and		
	recirculted, often after to the fish pond.			
	- The soil in the area selected for fish farm should be	•••••		
	- Any existing line must be excluded frenvisaged for fish farm.	om the area		
	are essential for operating major fish fa	rms efficiently.		
	- The site of fish farm should be in the of transp			
	- The fish farm should be sited primarily in areas unsuited to	other		
	uses.			
	- Transport of feed from the to the ponds			
	to the holding ponds should involve short l	nauling distances.		
	- Sites should be selected for fish farms only where water of the required			
	is available.			
	2- Write on:-	(10 Marks)		
	(a) Different kinds of aquaculture.			
	(b) Causes of mortality in fish transportation.			
	3-Mention only 5 of:	(10 Marks)		
	(a) Objectives of aquaculture.			
	(b) Economic and social factors affecting selection of sites for a	iquaculture.		
4-	-What are:	(10 Marks)		
)	(a)The required geotechnical data for fish farm.			
-	(b) The important climatological factors needed for the site of	fish farm.		
	- Mention:	(10 Marks)		
	(a) The desirable characteristics of aquaculture organisms.	,		
	(b)The criteria for selection of species for culture.			

Good Luck

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
- Osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

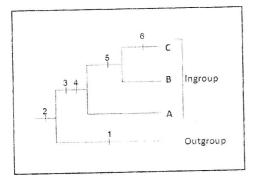
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - ••
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

of the brain.	
hormones such as	
ta are and	
ear are known as	tishes
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n to import & Cl	
consuming migration.	•
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C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------ End ------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrong one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
it. IVA	incres of terms with ear in factority for	arcarrenge	meron is annular cartileas
 The cartilage surrounding the buccal funnal in Petromyzon is annular cartilage Anticoagulant in petromyzon is secreted by mucous glands 			
		TAN BUREFALLING	Signature and the contract of
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
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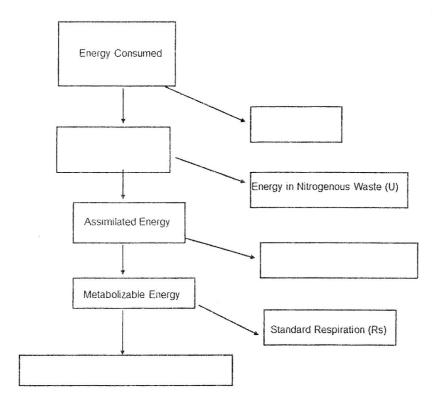
-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
- In static freshwater ponds, the water supply may be from		- Aquaclture is estimated to contribute tons in fisl	h production in
In brackish water ponds there is a system of		1983.	
In brackish water ponds there is a system of		- In static freshwater ponds, the water supply may be from	
In culture in recirculatory system, water is			
In culture in recirculatory system, water is		- In brackish water ponds there is a system of	to control the
recirculted, often after			
recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			v
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
envisaged for fish farm.		- Any existing line must be excluded from	the area
- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
Transport of feed from the			
Transport of feed from the		- The fish farm should be sited primarily in areas unsuited to oth	er
		uses.	
- Sites should be selected for fish farms only where water of the required		- Transport of feed from the to the ponds and	l of the
2- Write on:- (10 Marks) (a) Different kinds of aquaculture. (b) Causes of mortality in fish transportation. 3-Mention only 5 of: (10 Marks) (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (10 Marks) (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.		to the holding ponds should involve short hau	ling distances.
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(a) The desirable characteristics of aquaculture organisms.			
		(a) The desirable characteristics of aquaculture organisms.	,
		-	

Good Luck

level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

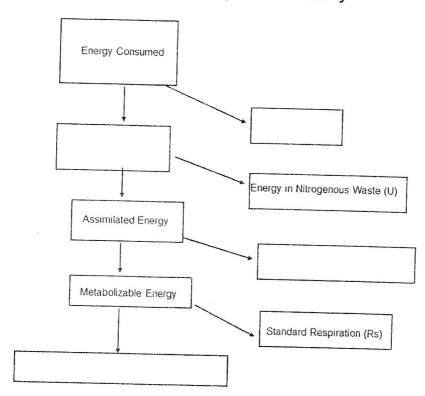


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

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Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

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Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characteristics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

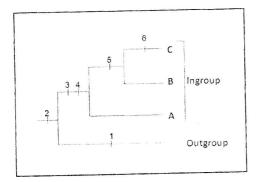
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - a -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

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Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	
	6.	Fishes breed at regular intervals during a season within a year are known as	fishes
	7.	Cyclostomata have one with no genital and release gametes int cavity.	o body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
1.	G	rowth rate of immature fish are much faster than those of mature fish.	()
2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilla levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

١

Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes.......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrong one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the contract of
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
------------	-----------	-------------

1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded frenvisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

Good Luck

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Level:	

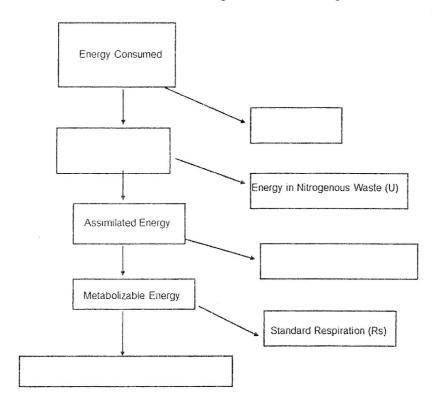
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

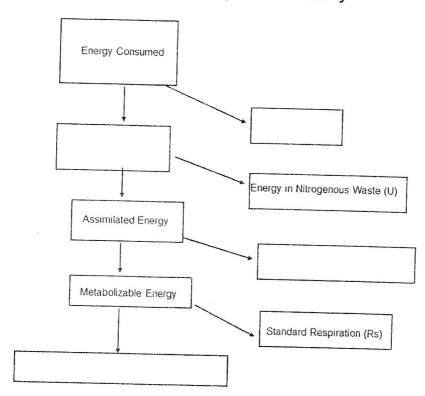


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

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Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

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Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characteristics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

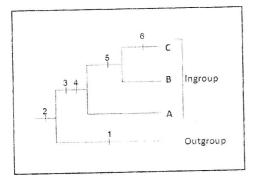
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - ---
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

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hormones such as	
ta are and	
ear are known as	tishes
ınd release gametes in	ito body
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consuming migration.	•
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C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------ End ------- End ------- بالتوفيق و السداد هناء عاطف جودة

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes.......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two pag	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrone one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the company
	e eggs of lampreys are Teloleithal		
IAF. I	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
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-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
- In static freshwater ponds, the water supply may be from		- Aquaclture is estimated to contribute tons in fisl	h production in
In brackish water ponds there is a system of		1983.	
In brackish water ponds there is a system of		- In static freshwater ponds, the water supply may be from	
In culture in recirculatory system, water is			
In culture in recirculatory system, water is		- In brackish water ponds there is a system of	to control the
recirculted, often after			
recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			•
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
envisaged for fish farm.		- Any existing line must be excluded from	the area
- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
Transport of feed from the			
Transport of feed from the		- The fish farm should be sited primarily in areas unsuited to oth	er
		uses.	
- Sites should be selected for fish farms only where water of the required		- Transport of feed from the to the ponds and	l of the
2- Write on:- (10 Marks) (a) Different kinds of aquaculture. (b) Causes of mortality in fish transportation. 3-Mention only 5 of: (10 Marks) (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (10 Marks) (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.		to the holding ponds should involve short hau	ling distances.
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(a) The desirable characteristics of aquaculture organisms.			
		(a) The desirable characteristics of aquaculture organisms.	,
		-	

Good Luck

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

Part	I – Histology
	each of the following statements: (10 Marks)
1- What is the shape of the epithelial c	
a. Squamous	b. Cuboidal
c. Stratified	d. Columnar
	cylindrical cells with multiple nuclei located a
the periphery of the cell?	
a. Smooth	b. Skeletal
c. Cardiac	d. All are correct
3- Which type of tissue forms glands?	
a. Epithelial	b. Nervous
c. Connective	d. Muscular
4- The minute passageways in the bon with each other are called:	y matrix that allow osteocytes to communicate
a. Lamellae	b. Osteons
c. Lacunae	d. Canaliculi
5- The two types of cells which exist in	nervous tissue are:
a. Dendrites and axons	b. Satellite cells and neurons
c. Nerve processes and nerve fibers	
6- What is the surface modification seen of	on the cells of the epididymis?
a- Microvilli	b- Stereocilia
c- Cilia	d- Both a & b
7- Which of the following is NOT a fibe	er found in connective tissue?
a. Collagen fiber	b. Reticular fiber
c. Elastic fiber	d. Purkinje fiber
8- Which fiber type has more myoglobin?	
a- Red fibers	b- White fibers
c- Intermediate fibers	d- All of the above

Look at the back of the page for the rest of the exam

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

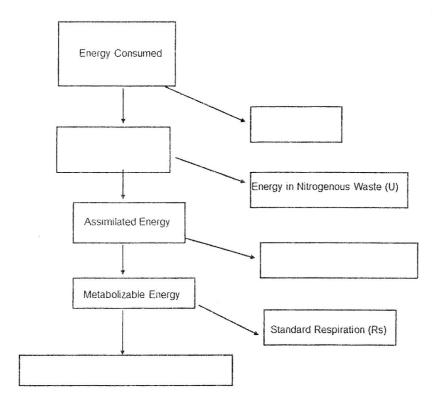
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

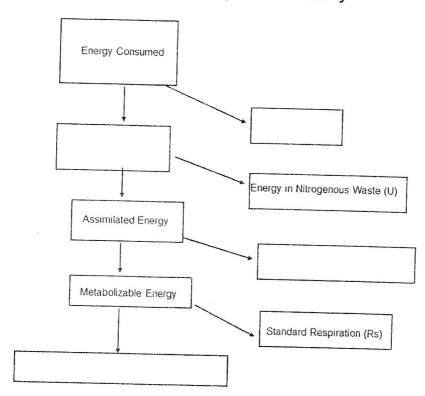


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Egypt, Assiut University
Faculty of Science,
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Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

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Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
- Osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

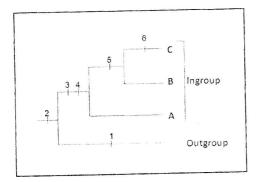
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - a -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	
	6.	Fishes breed at regular intervals during a season within a year are known as	fishes
	7.	Cyclostomata have one with no genital and release gametes int cavity.	o body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
1.	G	rowth rate of immature fish are much faster than those of mature fish.	()
2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilia levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each			
	other().			
2-The ecosystem	Are the plants ().			
3- The limiting factor	Is killing and eating an individual of the same species().			
4- Range of tolerance	Are those which become active during day time ().			
5- Homeostasis	Are those which become active during night			
6-Monogamy	Are found on the top of food pyramid().			
7-Polyandry	The number of births in a given time period ().			
8-Birth rate	Depend on internal heat production().			
9- Homeotherms	The formation of a pair bond between one male and one			
	female().			
10- Mutualism	The individual female gains two or more males().			
11-Producers	The range of the environmental conditions within which the organism can tolerate			
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate			
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment			
14-Nocturnal animals	Is the structural and functional unit studied in Ecology			
15- Carnivorous	An assemblage of populations in a given			
animals	area()			

اقلب الصفحة من فضلك

١

Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two pag			
1 (1	ionse th o best correct answ er		(10 degree)		
* ec	Scales in the sharks are:		-		
	a- Cycloid	C-	Placoid		
	b- Ctenoid	d-	Ganoid		
200	One of the following is converted into	o thyroid gla	and of vertebrates:		
	a- Endostyle	E. ox	Epipharyngeal groove		
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands		
3-	The thermoreceptor in branchioston	ia is:			
	a- Eye spots	C-	infnudibular organ		
	b- Cophalic pigments	ď-	Kollickers pit		
4-	Excretion in vertebrates takes place	by:			
	a- Unpaired kidney				
	b- Unpaired pronephron				
	c- Paired mesonephric kidneys				
	d- Paired mesonephric and meta	inephric kid	neys		
5-	The pineal organ in lampreys is:	27			
	e- Present immediately behind the nostril				
	b- Present immediately behind t				
	c- Present between the eye and t	the nostril	•		
	d- Absent		, e 4 , B , W		
5-	Each gill pouch in petromyzon comm				
	a- Gill lamella	Ça	External gill slits		
	b- Gill arches		Internal gill slits		
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t		
	a- Forebrain		lindbrain		
	b- Midbrain		Viedulia oblongata		
8-	Intermediates between cephalochore	lates and ver	rtebrates:		
		is c-branchi	ostoma d- Ammocoete larva		
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas		
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane		
10-	The teeth in frog are meant for:	nr.	ring d-Cutting		
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting		
		1.28	to me wrone one;		
	h is an anamniote animal	n a mala da			
	e term vertebrata is synonymous to ci		than a raise		
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Committee	than 2 pans tha works of Ordovision		
			int ivers or vigorical		
O. MAR	5. Exoskeleton in lampreys is cartilaginous				
6. Muscles of trunk and fail in petromyzon are arranged in D shaped myotomes					
	7. The cartilage surrounding the buccal funnal in Petromyzon is annular cartilage				
8. Anticoagulant in petromyzon is secreted by mucous glands					
	e eggs of lampreys are Teloleithal				
IAF. I	n frog stomach is U shaped				

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
------------	-----------	-------------

1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded frenvisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

Good Luck

9- Which cell is a connective tia. Kupffer cellsc. Langerhans cell	ssue fixed macrophage? b. Histioc d. Microgli	
c. Neuroglia II- Complete the followings: 1- The function of fibroblasts a	forming a myelin in the peri b. Basket cel d. Ganglion (10 Marks) re:	pheral nervous system? l
a	b, phage are: b, retory glands are:	
 4- The two types of mast cells are: a. 5- The two types of fat cells are: a. 6- Osteoclast cells are formed by 7- Naked nerve fiber means 8- In a neuron, the rough endopl 9- The tubulo-acinar glands are a. 	b b fusion of: asmic reticulum is termed	•
III. Answer only ONE of the follo1- Types and functions of n2- Difference between spins	wings with drawings	(5 Marks)

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

<u>Part I – </u>	Histology		
I-Choose the most appropriate answer for ea			
	- What is the shape of the epithelial cells in a mesothelium?		
a. Squamous	b. Cuboidal		
c. Stratified	d. Columnar		
2- Which muscle type consists of long, cy	lindrical cells with multiple nuclei located a		
the periphery of the cell?			
a. Smooth	b. Skeletal		
c. Cardiac	d. All are correct		
3- Which type of tissue forms glands?			
a. Epithelial	b. Nervous		
c. Connective	d. Muscular		
4- The minute passageways in the bony r with each other are called:	natrix that allow osteocytes to communicate		
a. Lamellae	b. Osteons		
c. Lacunae	d. Canaliculi		
5- The two types of cells which exist in ne	rvous tissue are:		
a. Dendrites and axons	b. Satellite cells and neurons		
c. Nerve processes and nerve fibers	d. Neurons and glia cells		
6- What is the surface modification seen on t	the cells of the epididymis?		
a- Microvilli	b- Stereocilia		
c- Cilia	d- Both a & b		
7- Which of the following is NOT a fiber found in connective tissue?			
a. Collagen fiber	b. Reticular fiber		
c. Elastic fiber	d. Purkinje fiber		
8- Which fiber type has more myoglobin?			
a- Red fibers	b- White fibers		
c- Intermediate fibers	d- All of the above		

Look at the back of the page for the rest of the exam

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Zoology Dept.

Level:	

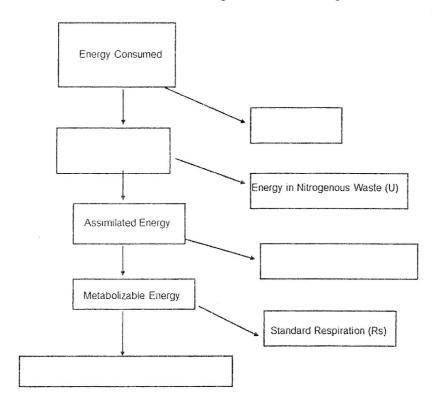
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

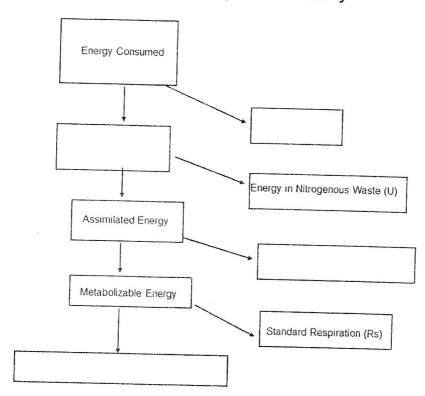


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

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Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

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Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to its introvenient.
3. Osmoconformer	
o. Osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	and the suspension
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

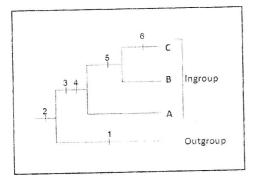
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding

34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of

- 24 -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

of the brain. y hormones such as	
y hormones such as	
y hormones such as	
nata are and	
year are known as	tishes
- and release gametes in	to body
mOsmol/l to	
ion to import & Cl	
gy consuming migration.	,
rrect one with False (F) (5
r	()
f mature fish.	() ()
ange over time	()
nd of the premaxilla	()
han that in 20C	()
han that in 20C.	()
e with high proportion	,
their life.	()
	()
0% of sea water	()
gill epithelium of	()
	<i>i</i> \
eichtnyes	()
;t	steichthyes

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two pag	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrone one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. III	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Committee	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de verenda en de el	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcanaenge	meron is annular cartileas
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the company
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
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-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
- In static freshwater ponds, the water supply may be from		- Aquaclture is estimated to contribute tons in fisl	h production in
In brackish water ponds there is a system of		1983.	
In brackish water ponds there is a system of		- In static freshwater ponds, the water supply may be from	
In culture in recirculatory system, water is			
In culture in recirculatory system, water is		- In brackish water ponds there is a system of	to control the
recirculted, often after			
recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			•
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
envisaged for fish farm.		- Any existing line must be excluded from	the area
- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
Transport of feed from the			
Transport of feed from the		- The fish farm should be sited primarily in areas unsuited to oth	er
		uses.	
- Sites should be selected for fish farms only where water of the required		- Transport of feed from the to the ponds and	l of the
2- Write on:- (10 Marks) (a) Different kinds of aquaculture. (b) Causes of mortality in fish transportation. 3-Mention only 5 of: (10 Marks) (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (10 Marks) (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.		to the holding ponds should involve short hau	ling distances.
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(a) The desirable characteristics of aquaculture organisms.			
		(a) The desirable characteristics of aquaculture organisms.	,
		-	

Good Luck

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	A	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	
3.	Escape of blood outside the blood vessels or cardiac chambers.	
4.	new healthy tissue is replacing the damaged one	All the grant
5.	The nucleus shrinks, its chromatin becomes dense and it stains	
	darkly	
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
8.	Accumulation of excess water inside the cells	
9.	Accumulation of excess neutral fat in parenchymatous cells	,
10.	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

I	Look a	t the	back	of t	he	nage	for	the	rest	of	the	exam
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9- Which cell is a connective tia. Kupffer cellsc. Langerhans cell	ssue fixed macrophage? b. Histioc d. Microgli	
c. Neuroglia II- Complete the followings: 1- The function of fibroblasts a	forming a myelin in the peri b. Basket cel d. Ganglion (10 Marks) re:	pheral nervous system? l
a	b, phage are: b, retory glands are:	
 4- The two types of mast cells are: a. 5- The two types of fat cells are: a. 6- Osteoclast cells are formed by 7- Naked nerve fiber means 8- In a neuron, the rough endopl 9- The tubulo-acinar glands are a. 	b b fusion of: asmic reticulum is termed	•
III. Answer only ONE of the follo1- Types and functions of n2- Difference between spins	wings with drawings	(5 Marks)

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

Part	I – Histology
	each of the following statements: (10 Marks)
1- What is the shape of the epithelial c	
a. Squamous	b. Cuboidal
c. Stratified	d. Columnar
	cylindrical cells with multiple nuclei located a
the periphery of the cell?	
a. Smooth	b. Skeletal
c. Cardiac	d. All are correct
3- Which type of tissue forms glands?	
a. Epithelial	b. Nervous
c. Connective	d. Muscular
4- The minute passageways in the bon with each other are called:	y matrix that allow osteocytes to communicate
a. Lamellae	b. Osteons
c. Lacunae	d. Canaliculi
5- The two types of cells which exist in	nervous tissue are:
a. Dendrites and axons	b. Satellite cells and neurons
c. Nerve processes and nerve fibers	
6- What is the surface modification seen of	on the cells of the epididymis?
a- Microvilli	b- Stereocilia
c- Cilia	d- Both a & b
7- Which of the following is NOT a fibe	er found in connective tissue?
a. Collagen fiber	b. Reticular fiber
c. Elastic fiber	d. Purkinje fiber
8- Which fiber type has more myoglobin?	
a- Red fibers	b- White fibers
c- Intermediate fibers	d- All of the above

Look at the back of the page for the rest of the exam

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Level:	

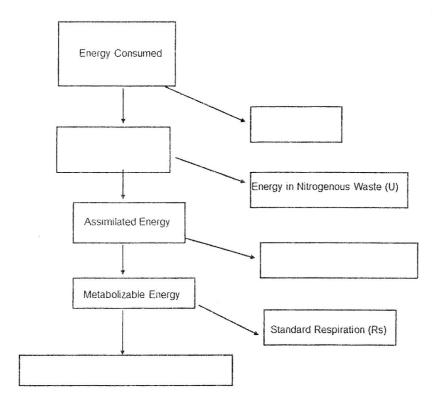
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

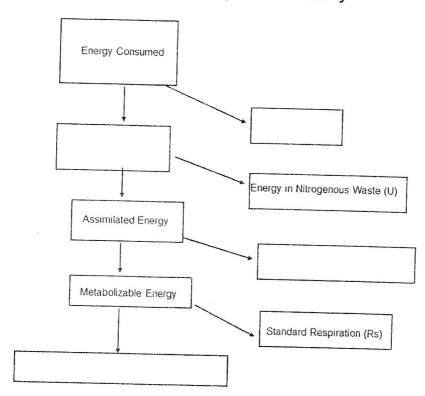


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

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Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

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2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

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Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

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Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

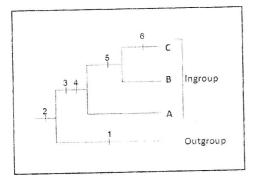
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

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e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - a -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

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- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

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Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

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level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	
	6.	Fishes breed at regular intervals during a season within a year are known as	fishes
	7.	Cyclostomata have one with no genital and release gametes int cavity.	o body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
1.	G	rowth rate of immature fish are much faster than those of mature fish.	()
2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilla levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each	
	other().	
2-The ecosystem	Are the plants ().	
3- The limiting factor	Is killing and eating an individual of the same species().	
4- Range of tolerance	Are those which become active during day time ().	
5- Homeostasis	Are those which become active during night	
6-Monogamy	Are found on the top of food pyramid().	
7-Polyandry	The number of births in a given time period ().	
8-Birth rate	Depend on internal heat production().	
9- Homeotherms	The formation of a pair bond between one male and one	
	female().	
10- Mutualism	The individual female gains two or more males().	
11-Producers	The range of the environmental conditions within which the organism can tolerate	
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate	
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment	
14-Nocturnal animals	Is the structural and functional unit studied in Ecology	
15- Carnivorous	An assemblage of populations in a given	
animals	area()	

اقلب الصفحة من فضلك

١

Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two pag	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and t	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrone one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. III	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Committee	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de verenda en de el	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcanaenge	meron is annular cartileas
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the company
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded frenvisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

Good Luck

T- Complete the following statements	
1- Inflammation is defined as	

2- Granuloma is defined as	
	(2 Marks)
3- Causes of cloudy swelling are:	(3 Marks)
a	
b	
C	
4- Types of inflammation include:	(3 Marks)
a	
b	
c	

Name of the examiner: Prof. Bothaina M. Khidr

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	A	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	
3.	Escape of blood outside the blood vessels or cardiac chambers.	
4.	new healthy tissue is replacing the damaged one	
5.	The nucleus shrinks, its chromatin becomes dense and it stains darkly	
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
8.	Accumulation of excess water inside the cells	
9.	Accumulation of excess neutral fat in parenchymatous cells	
10	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

Look at th	e back	of the	page	for the	e rest of	the exan
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9- Which cell is a connective tia. Kupffer cellsc. Langerhans cell	ssue fixed macrophage? b. Histioc d. Microgli	
c. Neuroglia II- Complete the followings: 1- The function of fibroblasts a	forming a myelin in the peri b. Basket cel d. Ganglion (10 Marks) re:	pheral nervous system? l
a	b, phage are: b, retory glands are:	
 4- The two types of mast cells are: a. 5- The two types of fat cells are: a. 6- Osteoclast cells are formed by 7- Naked nerve fiber means 8- In a neuron, the rough endopl 9- The tubulo-acinar glands are a. 	b b fusion of: asmic reticulum is termed	•
III. Answer only ONE of the follo1- Types and functions of n2- Difference between spins	wings with drawings	(5 Marks)

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

<u>Part I – </u>	Histology
I-Choose the most appropriate answer for ea	
1- What is the shape of the epithelial cells	
a. Squamous	b. Cuboidal
c. Stratified	d. Columnar
2- Which muscle type consists of long, cy	lindrical cells with multiple nuclei located a
the periphery of the cell?	
a. Smooth	b. Skeletal
c. Cardiac	d. All are correct
3- Which type of tissue forms glands?	
a. Epithelial	b. Nervous
c. Connective	d. Muscular
4- The minute passageways in the bony r with each other are called:	natrix that allow osteocytes to communicate
a. Lamellae	b. Osteons
c. Lacunae	d. Canaliculi
5- The two types of cells which exist in ne	rvous tissue are:
a. Dendrites and axons	b. Satellite cells and neurons
c. Nerve processes and nerve fibers	d. Neurons and glia cells
6- What is the surface modification seen on t	the cells of the epididymis?
a- Microvilli	b- Stereocilia
c- Cilia	d- Both a & b
7- Which of the following is NOT a fiber to	found in connective tissue?
a. Collagen fiber	b. Reticular fiber
c. Elastic fiber	d. Purkinje fiber
8- Which fiber type has more myoglobin?	
a- Red fibers	b- White fibers
c- Intermediate fibers	d- All of the above

Look at the back of the page for the rest of the exam

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Level:	

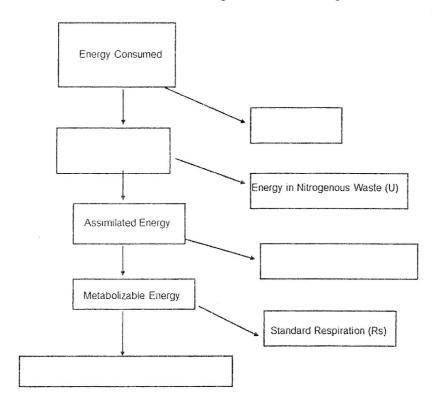
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

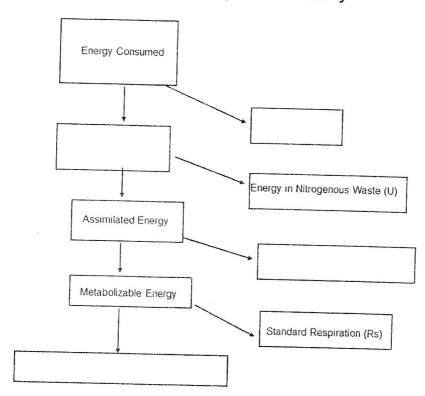


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

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Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

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Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to its introvenient.
3. Osmoconformer	
o. Osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	and the suspension
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characteristics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

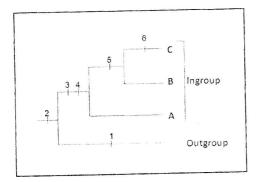
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

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e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - a -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

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Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

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Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

A-	Fill 1.	ill in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as				
	2.	Gonadotropin-releasing hormones are secreted by of the brain. Fishes spawn once during lifetime are known as				
	3.	Fishes spawn once during mediate are known as				
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as				
	5.	The very important structural innovations in Gnathostomata are and	fichas			
	6.	Fishes breed at regular intervals during a season within a year are known as	n hadu			
	7.	Cyclostomata have one with no genital and release gametes into cavity.	body			
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l to mOsmol/l.				
	9.	In lamprey, β -type & Cl				
	3. 10	Fishes of family spawn once after long, energy consuming migration.				
B-	La	bel the correct statement with True (T) and the incorrect one with False (F)	(5			
_		arks):				
1		rowth rate of immature fish are much faster than those of mature fish.	()			
2	le Le	positive allometric growth, the shape of fish does not change over time	()			
3	. 11	the most highly evolved Elasmobranches, the anterior end of the premaxilla	()			
J	 	evelops what's called an ascending process.				
4	٨	Aicropterus salmoides consumes food at 10C three times than that in 20C.	()			
5	. F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()			
6	Δ	Anguillidae and Salmonidae spawn more than once during their life.	()			
7	-	lagfishes could not perform as osmoconformers.	()			
8	1	JaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()			
9	. c	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()			
1	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()			
	İ	n osmoregulation.				
<i>C</i> -	C	hoice the correct answer of each list in the following (20 marks):				
•	-					

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes.......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par			
1 (1	ionse th o best correct answ er		(10 degree)		
* ec	Scales in the sharks are:		-		
	a- Cycloid	C-	Placoid		
	b- Ctenoid	d-	Ganoid		
200	One of the following is converted into	o thyroid gla	and of vertebrates:		
	a- Endostyle	E. ox	Epipharyngeal groove		
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands		
3-	The thermoreceptor in branchioston	ia is:			
	a- Eye spots	C-	infnudibular organ		
	b- Cophalic pigments	ď-	Kollickers pit		
4-	Excretion in vertebrates takes place	by:			
	a- Unpaired kidney				
	b- Unpaired pronephron				
	c- Paired mesonephric kidneys				
	d- Paired mesonephric and meta	inephric kid	neys		
5-	The pineal organ in lampreys is:	27			
	a- Present immediately behind t				
	b- Present immediately behind t				
	c- Present between the eye and t	the nostril	•		
	d- Absent		, e 4 , B , W		
5-	Each gill pouch in petromyzon comm				
	a- Gill lamella	Ça	External gill slits		
	b- Gill arches		Internal gill slits		
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t		
	a- Forebrain		lindbrain		
	b- Midbrain		Viedulia oblongata		
8-	Intermediates between cephalochore	lates and ver	rtebrates:		
		is c-branchi	ostoma d- Ammocoete larva		
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas		
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane		
10-	The teeth in frog are meant for:	nr.	ring d-Cutting		
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting		
		1.28	to me wrone one;		
	h is an anamniote animal	n a mala da			
	e term vertebrata is synonymous to ci		than a raise		
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision		
			int ivers or vigorical		
O. MAR	5. Exoskeleton in lampreys is cartilaginous				
it. IVA	6. Muscles of trunk and tail in petromyzon are arranged in D shaped myotomes				
	7. The cartilage surrounding the buccal funnal in Petromyzon is annular cartilage				
	8. Anticoagulant in petromyzon is secreted by mucous glands				
	e eggs of lampreys are Teloleithal				
IAF. I	n frog stomach is U shaped				

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
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-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
- In static freshwater ponds, the water supply may be from		- Aquaclture is estimated to contribute tons in fisl	h production in
In brackish water ponds there is a system of		1983.	
In brackish water ponds there is a system of		- In static freshwater ponds, the water supply may be from	
In culture in recirculatory system, water is			
In culture in recirculatory system, water is		- In brackish water ponds there is a system of	to control the
recirculted, often after			
recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			•
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
envisaged for fish farm.		- Any existing line must be excluded from	the area
- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
Transport of feed from the			
Transport of feed from the		- The fish farm should be sited primarily in areas unsuited to oth	er
		uses.	
- Sites should be selected for fish farms only where water of the required		- Transport of feed from the to the ponds and	l of the
2- Write on:- (10 Marks) (a) Different kinds of aquaculture. (b) Causes of mortality in fish transportation. 3-Mention only 5 of: (10 Marks) (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (10 Marks) (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.		to the holding ponds should involve short hau	ling distances.
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5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.			farm.
(a) The desirable characteristics of aquaculture organisms.			
		(a) The desirable characteristics of aquaculture organisms.	,
		-	

Good Luck

Assiut University Faculty of Science
Department of Zoology
Date: 10th May 2018
Time: 2 hours



كلية العلوم قسم علم الميوان

Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

	Part I – Histology	1
I-Choose the most appropriate answ	war far agab of the following at a	
I-Choose the most appropriate answ 1- What is the shape of the epith	relial calls in a mosotholium?	ments: (10 Marks)
a. Squamous	b. Cuboidal	•
c. Stratified	d. Columnar	.* ,
, and the second	u. Columnar	
2- Which muscle type consists of	flong cylindrical cells with mult	inla nuolai laastad
the periphery of the cell?	ing, cylinarical cens with mun	ipie nuciei jocated a
a. Smooth	b. Skeletal	
c. Cardiac	d. All are correct	
	w in the correct	a Marka
3- Which type of tissue forms gla	ands?	- € •
a. Epithelial	b. Nervous	1
c. Connective	d. Muscular	
		*
4- The minute passageways in th	ne bony matrix that allow osteocy	ites to communicate
with each other are called:	, ,	to communicate
a. Lamellae	b. Osteons	
c. Lacunae	d. Canalículi	
	,	
5- The two types of cells which ex	dist in nervous tissue are:	7.
a. Dendrites and axons	b. Satellite cells ar	d-neurons
c. Nerve processes and nerve		
•		•
6- What is the surface modification	seen on the cells of the epididymis?	
a- Microvilli	b- Stereocilia	•
c- Cilia	d- Both a & b	••
		• 1
7- Which of the following is NOT		e?
a. Collagen fiber	b. Reticular fiber	**************************************
c. Elastic fiber	d. Purkinje fiber	. *
8. Which fiber type has many	Johin 9	
8- Which fiber type has more myogl a- Red fibers	•	
c. Intermediate fibers	bWhite fibers	

Look at the back of the page for the rest of the exam

T- Complete the following statements	
1- Inflammation is defined as	

2- Granuloma is defined as	
	(2 Marks)
3- Causes of cloudy swelling are:	(3 Marks)
a	
b	
C	
4- Types of inflammation include:	(3 Marks)
a	
b	
c	

Name of the examiner: Prof. Bothaina M. Khidr

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	A	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	
3.	Escape of blood outside the blood vessels or cardiac chambers.	
4.	new healthy tissue is replacing the damaged one	
5.	The nucleus shrinks, its chromatin becomes dense and it stains darkly	
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
8.	Accumulation of excess water inside the cells	
9.	Accumulation of excess neutral fat in parenchymatous cells	
10	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

Look at th	e back	of the	page	for the	e rest of	the exan
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9- Which cell is a connective tia. Kupffer cellsc. Langerhans cell	ssue fixed macrophage? b. Histioc d. Microgli	
c. Neuroglia II- Complete the followings: 1- The function of fibroblasts a	forming a myelin in the peri b. Basket cel d. Ganglion (10 Marks) re:	pheral nervous system? l
a	b, phage are: b, retory glands are:	
 4- The two types of mast cells are: a. 5- The two types of fat cells are: a. 6- Osteoclast cells are formed by 7- Naked nerve fiber means 8- In a neuron, the rough endopl 9- The tubulo-acinar glands are a. 	b b fusion of: asmic reticulum is termed	•
III. Answer only ONE of the follo1- Types and functions of n2- Difference between spins	wings with drawings	(5 Marks)

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

<u>Part I – </u>	Histology
I-Choose the most appropriate answer for ea	
1- What is the shape of the epithelial cells	
a. Squamous	b. Cuboidal
c. Stratified	d. Columnar
2- Which muscle type consists of long, cy	lindrical cells with multiple nuclei located a
the periphery of the cell?	
a. Smooth	b. Skeletal
c. Cardiac	d. All are correct
3- Which type of tissue forms glands?	
a. Epithelial	b. Nervous
c. Connective	d. Muscular
4- The minute passageways in the bony r with each other are called:	natrix that allow osteocytes to communicate
a. Lamellae	b. Osteons
c. Lacunae	d. Canaliculi
5- The two types of cells which exist in ne	rvous tissue are:
a. Dendrites and axons	b. Satellite cells and neurons
c. Nerve processes and nerve fibers	d. Neurons and glia cells
6- What is the surface modification seen on t	the cells of the epididymis?
a- Microvilli	b- Stereocilia
c- Cilia	d- Both a & b
7- Which of the following is NOT a fiber to	found in connective tissue?
a. Collagen fiber	b. Reticular fiber
c. Elastic fiber	d. Purkinje fiber
8- Which fiber type has more myoglobin?	
a- Red fibers	b- White fibers
c- Intermediate fibers	d- All of the above

Look at the back of the page for the rest of the exam

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

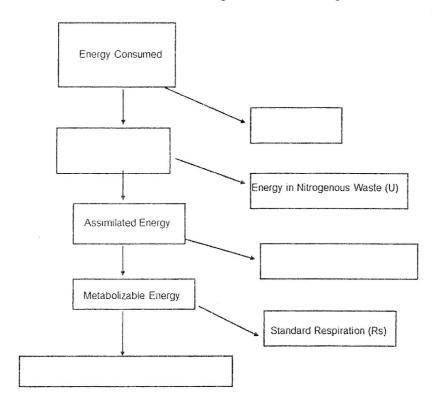
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

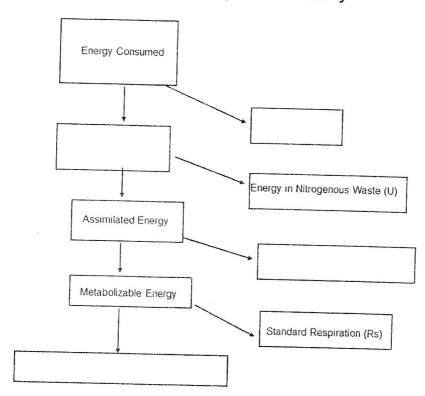


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

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Faculty of Science,
Zoology Dept.

Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

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Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characteristics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

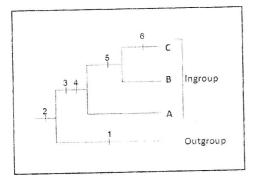
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding

34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of

- 21 -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

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Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	
	6.	Fishes breed at regular intervals during a season within a year are known as	fishes
	7.	Cyclostomata have one with no genital and release gametes int cavity.	o body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
1.	G	rowth rate of immature fish are much faster than those of mature fish.	()
2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilla levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

١

Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes.......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par					
1 (1	ionse th o best correct answ er		(10 degree)				
* ec	Scales in the sharks are:		-				
	a- Cycloid	C-	Placoid				
	b- Ctenoid	d-	Ganoid				
200	One of the following is converted into	o thyroid gla	and of vertebrates:				
	a- Endostyle	E. ox	Epipharyngeal groove				
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands				
3-	The thermoreceptor in branchioston	ia is:					
	a- Eye spots	C-	infnudibular organ				
	b- Cophalic pigments	ď-	Kollickers pit				
4-	Excretion in vertebrates takes place	by:					
	a- Unpaired kidney						
	b- Unpaired pronephron						
	c- Paired mesonephric kidneys						
	d- Paired mesonephric and meta	inephric kid	neys				
5-	The pineal organ in lampreys is:	27					
	a- Present immediately behind t						
	b- Present immediately behind t						
	c- Present between the eye and t	the nostril	•				
	d- Absent		, e 4 , B , W				
5-	Each gill pouch in petromyzon comm						
	a- Gill lamella	Ça	External gill slits				
	b- Gill arches		Internal gill slits				
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t				
	a- Forebrain		lindbrain				
	b- Midbrain		Viedulia oblongata				
8-	Intermediates between cephalochore	lates and ver	rtebrates:				
		is c-branchi	ostoma d- Ammocoete larva				
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas				
4.0	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane				
10-	The teeth in frog are meant for:	nr.	ring d-Cutting				
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting				
		1.28	to me wrone one;				
	h is an anamniote animal	n a mala da					
	e term vertebrata is synonymous to ci		than a raise				
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision				
			int ivers or vigorical				
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for				
it. IVA	incres of terms with ear in factority for	arcarrenge	meron is annular cartileas				
7. The cartilage surrounding the buccal funnal in Petromyzon is annular cartilage							
8. Anticoagulant in petromyzon is secreted by mucous glands							
	e eggs of lampreys are Teloleithal						
IAF. I	n frog stomach is U shaped						

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
------------	-----------	-------------

1-	Complete:-	(10 Marks)				
	-The term aquaculture refers to the cultivation of					
	- Aquaclture is estimated to contribute tons in	fish production in				
	1983.	•				
	- In static freshwater ponds, the water supply may be from	,				
	and					
	- In brackish water ponds there is a system of	to control the				
	and					
	- In culture in recirculatory system, water is	continuously and				
	recirculted, often after to the fish pond.					
	- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •				
	- Any existing line must be excluded frenvisaged for fish farm.	rom the area				
	are essential for operating major fish fa	rms efficiently.				
	- The site of fish farm should be in the of transportation					
	••••••					
	- The fish farm should be sited primarily in areas unsuited to other					
	uses.					
	- Transport of feed from the to the ponds and of the					
	to the holding ponds should involve short hauling distances.					
	- Sites should be selected for fish farms only where water of the required					
	is available.					
	2- Write on:-	(10 Marks)				
	(a) Different kinds of aquaculture.	,				
	(b) Causes of mortality in fish transportation.					
	3-Mention only 5 of:	(10 Marks)				
	(a) Objectives of aquaculture.					
	(b) Economic and social factors affecting selection of sites for aquaculture.					
4-	-What are:	(10 Marks)				
	(a)The required geotechnical data for fish farm.					
-	(b) The important climatological factors needed for the site of	fish farm.				
	- Mention:	(10 Marks)				
	(a) The desirable characteristics of aquaculture organisms.	,				
	(b)The criteria for selection of species for culture.					

Good Luck

71- Complete the following statements			
1- Inflammation is defined as			
			(2 Marks)
	; · •	,	in in
2- Granuloma is defined as			
			(2 Marks)
	Luarorac chamore		
3- Causes of cloudy swelling are:	rome i vis		(3 Marks)
a		· ·	*
b			•
c	7 · · · · · · · · · · · · · · · · · · ·		
4- Types of inflammation include:			(3 Marks)
a	tryon denne erate.	, i	*
b			
c. ,	Senifik Trene in 15	Gr fey	

Name of the examiner: Prof. Bothaina M. Khidr

Assiut University Faculty of Science
Department of Zoology
Date: 10th May 2018
Time: 2 hours



كلية العلوم قسم علم الديوان

Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

Part I –	- Histology	,
I-Choose the most appropriate answer for ea	ash of the following at at	
1- What is the shape of the epithelial cells	s in a mesothelium?	1ts: (10 Marks)
a. Squamous	b. Cuboidal	•
~	d. Columnar	
2- Which muscle type consists of long, cy	dindrical cells with multiple	nuclei located a
the periphery of the cell?		
a. Smooth	b. Skeletal	
c. Cardiac	d. All are correct	
3- Which type of tissue forms glands?		•
a. Epithelial	b. Nervous	
c. Connective	d. Muscular	
The second secon		
4- The minute passageways in the bony n with each other are called:	natrix that allow osteocytes	to communicate
a. Lamellae	b. Osteons	
c. Lacunae	d. Canaliculi	
5- The two types of cells which exist in ne	rvous tissue are:	
a. Dendrites and axons	b. Satellite cells and no	curons
c. Nerve processes and nerve fibers	d. Neurons and glia ce	
6- What is the surface modification seen on t	he cells of the epididymis?	•
a- Microvilli	b- Stereocilia	
c- Cilia	d-Both a & b	
7- Which of the following is NOT a fiber f	ound in connective tissue?	
a. Collagen fiber	b. Reticular fiber	
c. Elastic fiber	d. Purkinje fiber 🐪	
8- Which fiber type has more myoglobin?		
a- Red fibers	bWhite fibers	
c- Intermediate fibers	d- All of the above	

Look at the back of the page for the rest of the exam

T- Complete the following statements	
1- Inflammation is defined as	
2- Granuloma is defined as	
	(2 Marks)
3- Causes of cloudy swelling are:	(3 Marks)
2	
b	
c	
4- Types of inflammation include:	(3 Marks)
a	
b	
c	

Name of the examiner: Prof. Bothaina M. Khidr

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	A	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	
3.	Escape of blood outside the blood vessels or cardiac chambers.	
4.	new healthy tissue is replacing the damaged one	All the grant
5.	The nucleus shrinks, its chromatin becomes dense and it stains	
	darkly	
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
8.	Accumulation of excess water inside the cells	
9.	Accumulation of excess neutral fat in parenchymatous cells	,
10.	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

I	Look a	t the	back	of t	he	nage	for	the	rest	of	the	exam
. 8	WOOK U	6 6116	CARCIN	()1	110	1 mg	101	1110	8 CIJ C	O.	EIIC	CALLERIE

9- Which cell is a connective tia. Kupffer cellsc. Langerhans cell	ssue fixed macrophage? b. Histioc d. Microgli	
c. Neuroglia II- Complete the followings: 1- The function of fibroblasts a	forming a myelin in the peri b. Basket cel d. Ganglion (10 Marks) re:	pheral nervous system? l
a	b, phage are: b, retory glands are:	
 4- The two types of mast cells are: a. 5- The two types of fat cells are: a. 6- Osteoclast cells are formed by 7- Naked nerve fiber means 8- In a neuron, the rough endopl 9- The tubulo-acinar glands are a. 	b b fusion of: asmic reticulum is termed	•
III. Answer only ONE of the follo1- Types and functions of n2- Difference between spins	wings with drawings	(5 Marks)

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

Part	I – Histology
	each of the following statements: (10 Marks)
1- What is the shape of the epithelial c	
a. Squamous	b. Cuboidal
c. Stratified	d. Columnar
	cylindrical cells with multiple nuclei located a
the periphery of the cell?	
a. Smooth	b. Skeletal
c. Cardiac	d. All are correct
3- Which type of tissue forms glands?	
a. Epithelial	b. Nervous
c. Connective	d. Muscular
4- The minute passageways in the bon with each other are called:	y matrix that allow osteocytes to communicate
a. Lamellae	b. Osteons
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5- The two types of cells which exist in	nervous tissue are:
a. Dendrites and axons	b. Satellite cells and neurons
c. Nerve processes and nerve fibers	
6- What is the surface modification seen of	on the cells of the epididymis?
a- Microvilli	b- Stereocilia
c- Cilia	d- Both a & b
7- Which of the following is NOT a fibe	er found in connective tissue?
a. Collagen fiber	b. Reticular fiber
c. Elastic fiber	d. Purkinje fiber
8- Which fiber type has more myoglobin?	
a- Red fibers	b- White fibers
c- Intermediate fibers	d- All of the above

Look at the back of the page for the rest of the exam

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

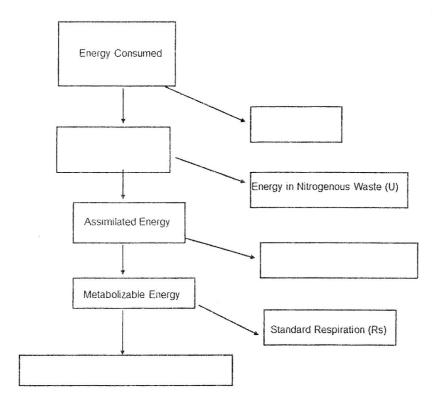
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

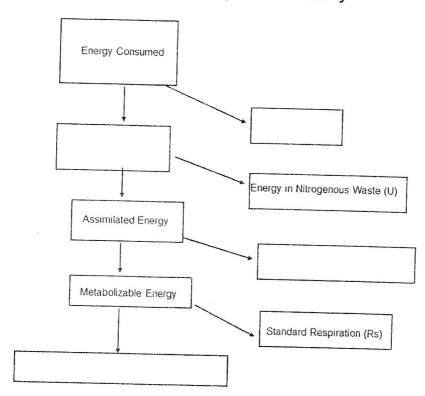


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

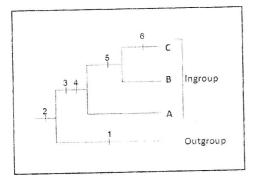
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - a -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
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Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	
	6.	Fishes breed at regular intervals during a season within a year are known as	fishes
	7.	Cyclostomata have one with no genital and release gametes int cavity.	o body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
1.	G	rowth rate of immature fish are much faster than those of mature fish.	()
2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilla levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

١

Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You kin trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrone one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. III	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Committee	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is appriar cartifor
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the comments
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded frenvisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

Good Luck

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	\mathbf{A}	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	•
3.	Escape of blood outside the blood vessels or cardiac chambers.	
	new healthy tissue is replacing the damaged one	
5.	The nucleus shrinks, its chromatin becomes dense and it stains	•
	darkly .	· • • • • • • • • • • • • • • • • • • •
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
	Accumulation of excess water inside the cells	•
9.	Accumulation of excess neutral fat in parenchymatous cells	
10.	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

Look at the back of the page for the rest of the exam

71- Complete the following statements		
1- Inflammation is defined as		
		(2 Marks)
2- Granuloma is defined as		
		(2 Marks)
•••••	Later of the second	
3- Causes of cloudy swelling are:	anne " ()	(3 Marks)
a	*	
b		
c	•	
4- Types of inflammation include:		(3 Marks)
a	trymidence exite	
b		
c.	sentition is	Soften en en en en en en en

Name of the examiner: Prof. Bothaina M. Khidr

Assiut University Faculty of Science
Department of Zoology
Date: 10th May 2018
Time: 2 hours



كلية العلوم قسم علم الميوان

Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

	Part I – Histology	1
I-Choose the most appropriate answ	war far agab of the following at a	************
I-Choose the most appropriate answ 1- What is the shape of the epith	relial calls in a mosotholium?	ments: (10 Marks)
a. Squamous	b. Cuboidal	•
c. Stratified	d. Columnar	.* ,
, and the second	u. Columnar	
2- Which muscle type consists of	flong cylindrical cells with mult	inla nuolai laastad
the periphery of the cell?	ing, cylinarical cens with mun	ipie nuciei jocated a
a. Smooth	b. Skeletal	
c. Cardiac	d. All are correct	
	an in the correct	a Marka
3- Which type of tissue forms gla	ands?	- € •
a. Epithelial	b. Nervous	1
c. Connective	d. Muscular	
		*
4- The minute passageways in th	ne bony matrix that allow osteocy	ites to communicate
with each other are called:	, ,	to communicate
a. Lamellae	b. Osteons	
c. Lacunae	d. Canalículi	
	,	
5- The two types of cells which ex	dist in nervous tissue are:	7.
a. Dendrites and axons	b. Satellite cells ar	d-neurons
c. Nerve processes and nerve		
•		•
6- What is the surface modification	seen on the cells of the epididymis?	
a- Microvilli	b- Stereocilia	•
c- Cilia	d- Both a & b	••
		• 1
7- Which of the following is NOT		e?
a. Collagen fiber	b. Reticular fiber	**************************************
c. Elastic fiber	d. Purkinje fiber	. *
8. Which fiber type has many	Johin 9	
8- Which fiber type has more myogl a- Red fibers	•	
c. Intermediate fibers	bWhite fibers	

Look at the back of the page for the rest of the exam

T- Complete the following statements	
1- Inflammation is defined as	

2- Granuloma is defined as	
	(2 Marks)
3- Causes of cloudy swelling are:	(3 Marks)
a	
b	
C	
4- Types of inflammation include:	(3 Marks)
a	
b	
c	

Name of the examiner: Prof. Bothaina M. Khidr

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	A	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	
3.	Escape of blood outside the blood vessels or cardiac chambers.	
4.	new healthy tissue is replacing the damaged one	
5.	The nucleus shrinks, its chromatin becomes dense and it stains darkly	
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
8.	Accumulation of excess water inside the cells	
9.	Accumulation of excess neutral fat in parenchymatous cells	
10	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

Look at th	e back	of the	page	for the	e rest of	the exan
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9- Which cell is a connective tia. Kupffer cellsc. Langerhans cell	ssue fixed macrophage? b. Histioc d. Microgli	
c. Neuroglia II- Complete the followings: 1- The function of fibroblasts a	forming a myelin in the peri b. Basket cel d. Ganglion (10 Marks) re:	pheral nervous system? l
a	b, phage are: b, retory glands are:	
 4- The two types of mast cells are: a. 5- The two types of fat cells are: a. 6- Osteoclast cells are formed by 7- Naked nerve fiber means 8- In a neuron, the rough endopl 9- The tubulo-acinar glands are a. 	b b fusion of: asmic reticulum is termed	•
III. Answer only ONE of the follo1- Types and functions of n2- Difference between spins	wings with drawings	(5 Marks)

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

<u>Part I – </u>	Histology
I-Choose the most appropriate answer for ea	
1- What is the shape of the epithelial cells	
a. Squamous	b. Cuboidal
c. Stratified	d. Columnar
2- Which muscle type consists of long, cy	lindrical cells with multiple nuclei located a
the periphery of the cell?	
a. Smooth	b. Skeletal
c. Cardiac	d. All are correct
3- Which type of tissue forms glands?	
a. Epithelial	b. Nervous
c. Connective	d. Muscular
4- The minute passageways in the bony r with each other are called:	natrix that allow osteocytes to communicate
a. Lamellae	b. Osteons
c. Lacunae	d. Canaliculi
5- The two types of cells which exist in ne	rvous tissue are:
a. Dendrites and axons	b. Satellite cells and neurons
c. Nerve processes and nerve fibers	d. Neurons and glia cells
6- What is the surface modification seen on t	the cells of the epididymis?
a- Microvilli	b- Stereocilia
c- Cilia	d- Both a & b
7- Which of the following is NOT a fiber to	found in connective tissue?
a. Collagen fiber	b. Reticular fiber
c. Elastic fiber	d. Purkinje fiber
8- Which fiber type has more myoglobin?	
a- Red fibers	b- White fibers
c- Intermediate fibers	d- All of the above

Look at the back of the page for the rest of the exam

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

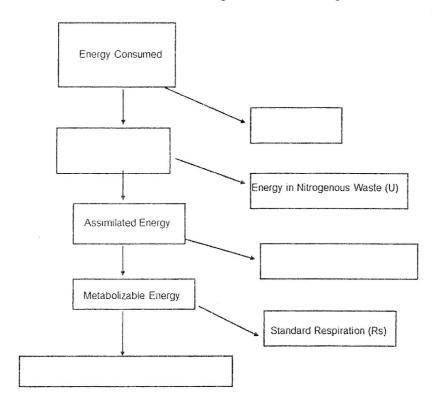
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

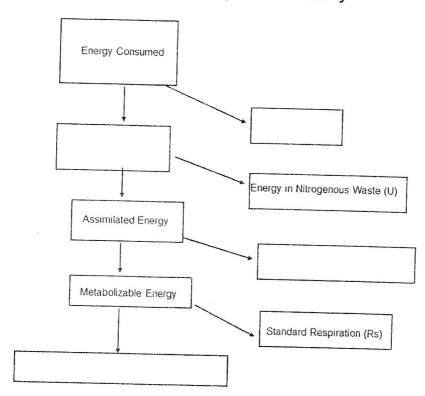


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

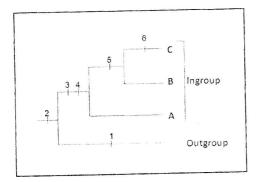
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - a -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

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- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

A-	Fill 1.	ill in the blank spaces (5 marks): . The internal mechanism that regulates the process of reproduction is known as			
	2.	Gonadotropin-releasing hormones are secreted by of the brain. Fishes spawn once during lifetime are known as			
	3.	Fishes spawn once during mediate are known as			
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as			
	5.	The very important structural innovations in Gnathostomata are and	fichas		
	6.	Fishes breed at regular intervals during a season within a year are known as	n hadu		
	7.	Cyclostomata have one with no genital and release gametes into cavity.	body		
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l to mOsmol/l.			
	9.	In lamprey, β -type & Cl			
	3. 10	Fishes of family spawn once after long, energy consuming migration.			
B-	La	bel the correct statement with True (T) and the incorrect one with False (F)	(5		
_		arks):			
1		rowth rate of immature fish are much faster than those of mature fish.	()		
2	le Le	positive allometric growth, the shape of fish does not change over time	()		
3	. 11	the most highly evolved Elasmobranches, the anterior end of the premaxilla	()		
J	 	evelops what's called an ascending process.			
4	٨	Aicropterus salmoides consumes food at 10C three times than that in 20C.	()		
5	. F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()		
6	Δ	Anguillidae and Salmonidae spawn more than once during their life.	()		
7	-	Hagfishes could not perform as osmoconformers.	()		
8	1	JaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()		
9	. c	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()		
1	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()		
	İ	n osmoregulation.			
<i>C</i> -	C	hoice the correct answer of each list in the following (20 marks):			
•	-				

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

١

Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes.......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par				
1 (1	ionse th o best correct answ er		(10 degree)			
* ec	Scales in the sharks are:		-			
	a- Cycloid	C-	Placoid			
	b- Ctenoid	d-	Ganoid			
200	One of the following is converted into	o thyroid gla	and of vertebrates:			
	a- Endostyle	E. ox	Epipharyngeal groove			
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands			
3-	The thermoreceptor in branchioston	ia is:				
	a- Eye spots	C-	infnudibular organ			
	b- Cophalic pigments	ď-	Kollickers pit			
4-	Excretion in vertebrates takes place	by:				
	a- Unpaired kidney					
	b- Unpaired pronephron					
	c- Paired mesonephric kidneys					
	d- Paired mesonephric and meta	inephric kid	neys			
5-	The pineal organ in lampreys is:	27				
	a- Present immediately behind t					
	b- Present immediately behind t					
	c- Present between the eye and t	the nostril	•			
	d- Absent		, e 4 , B , W			
5-	Each gill pouch in petromyzon comm					
	a- Gill lamella	Ça	External gill slits			
	b- Gill arches		Internal gill slits			
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t			
	a- Forebrain		lindbrain			
	b- Midbrain		Viedulia oblongata			
8-	Intermediates between cephalochore	lates and ver	rtebrates:			
		is c-branchi	ostoma d- Ammocoete larva			
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas			
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane			
10-	The teeth in frog are meant for:	nr.	ring d-Cutting			
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting			
		1.28	to me wrone one;			
	h is an anamniote animal	n a mala da				
	e term vertebrata is synonymous to ci		than a raise			
3. III	vertebrates, the pharyngeal gill slits a	no Commit in t	than 2 pans tha works of Ordovision			
	4. The first fossil records of vertebrates were found in the rocks of Ordovician					
O. MAR	5. Exoskeleton in lampreys is cartilaginous					
it. IVA	 Muscles of trunk and tail in petromyzon are arranged in D shaped myotomes The cartilage surrounding the buccal funnal in Petromyzon is annular cartilage 					
	8. Anticoagulant in petromyzon is secreted by mucous glands					
	e eggs of lampreys are Teloleithal					
IAF. II	n frog stomach is U shaped					

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving g	uestions:-
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-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
- In static freshwater ponds, the water supply may be from		- Aquaclture is estimated to contribute tons in fisl	h production in
In brackish water ponds there is a system of		1983.	
In brackish water ponds there is a system of		- In static freshwater ponds, the water supply may be from	
In culture in recirculatory system, water is			
In culture in recirculatory system, water is		- In brackish water ponds there is a system of	to control the
recirculted, often after			
recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			•
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
envisaged for fish farm.		- Any existing line must be excluded from	the area
- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
Transport of feed from the			
Transport of feed from the		- The fish farm should be sited primarily in areas unsuited to oth	er
		uses.	
- Sites should be selected for fish farms only where water of the required		- Transport of feed from the to the ponds and	l of the
2- Write on:- (10 Marks) (a) Different kinds of aquaculture. (b) Causes of mortality in fish transportation. 3-Mention only 5 of: (10 Marks) (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (10 Marks) (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.		to the holding ponds should involve short hau	ling distances.
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4-What are: (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (a) The desirable characteristics of aquaculture organisms.			aculture.
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5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.			farm.
(a) The desirable characteristics of aquaculture organisms.			
		(a) The desirable characteristics of aquaculture organisms.	,
		-	

Good Luck

9- Which cell is a connective tissue fix	ed macrophage?	
a. Kupffer cells	b. Histiocyte	
c. Langerhans cell	d. Microglia	
10- Which of the following is forming	g a myelin in the peripher	al nervous system?
a. Schwan cell	b. Basket cell	Add to the second
c. Neuroglia	d. Ganglion	A STATE OF THE STA
II- Complete the followings:	(10 Marks)	•
1- The function of fibroblasts are:	Large words and the findings and A	
a b		
0.04		
a b	, c	
3- The two types of mucous secretory	glands are:	
a b		
4- The two types of mast cells are:	3	
a b		
5- The two types of fat cells are:		
a b		
6- Osteoclast cells are formed by fusion	on of:	
All I I was Charmons		
8- In a neuron, the rough endoplasmi	ic reticulum is termed	
9. The tubulo-acinar glands are class	mea mo:	
a b		
III. Answer only ONE of the following	gs with drawings (5 Marks)
1- Types and functions of neur	oglia proper	
2- Difference between spinal ar	id sympathetic ganglia 🛒	4

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	\mathbf{A}	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	•
3.	Escape of blood outside the blood vessels or cardiac chambers.	
	new healthy tissue is replacing the damaged one	
5.	The nucleus shrinks, its chromatin becomes dense and it stains	•
	darkly .	· • • • • • • • • • • • • • • • • • • •
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
	Accumulation of excess water inside the cells	•
9.	Accumulation of excess neutral fat in parenchymatous cells	
10.	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

Look at the back of the page for the rest of the exam

71- Complete the following statements		
1- Inflammation is defined as		
		(2 Marks)
		,
2- Granuloma is defined as		
		(2 Marks)
•••••	Later of the second	
3- Causes of cloudy swelling are:	anne " ()	(3 Marks)
a	*	
b		
c	•	
4- Types of inflammation include:		(3 Marks)
a	trymidence exite	
b		
c.	sentition is	Soften en en en en en en en

Name of the examiner: Prof. Bothaina M. Khidr

Assiut University Faculty of Science
Department of Zoology
Date: 10th May 2018
Time: 2 hours



كلية العلوم قسم علم الميوان

Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

	Part I – Histology	1
I-Choose the most appropriate answ	war far agab of the following at a	
I-Choose the most appropriate answ 1- What is the shape of the epith	relial calls in a mosotholium?	ments: (10 Marks)
a. Squamous	b. Cuboidal	•
c. Stratified	d. Columnar	.* ,
, and the second	u. Columnar	
2- Which muscle type consists of	flong cylindrical cells with mult	inla nuolai laastad
the periphery of the cell?	ing, cylinarical cens with mun	ipie nuciei jocated a
a. Smooth	b. Skeletal	
c. Cardiac	d. All are correct	
	an in the correct	a Marka
3- Which type of tissue forms gla	ands?	- € •
a. Epithelial	b. Nervous	1
c. Connective	d. Muscular	
		*
4- The minute passageways in th	ne bony matrix that allow osteocy	ites to communicate
with each other are called:	, ,	to communicate
a. Lamellae	b. Osteons	
c. Lacunae	d. Canalículi	
	,	
5- The two types of cells which ex	dist in nervous tissue are:	7.
a. Dendrites and axons	b. Satellite cells ar	d-neurons
c. Nerve processes and nerve		
•		• •
6- What is the surface modification	seen on the cells of the epididymis?	
a- Microvilli	b- Stereocilia	•
c- Cilia	d- Both a & b	••
		• 1
7- Which of the following is NOT		e?
a. Collagen fiber	b. Reticular fiber	**************************************
c. Elastic fiber	d. Purkinje fiber	. *
8. Which fiber type has many	Johin 9	
8- Which fiber type has more myogl a- Red fibers	•	
c. Intermediate fibers	bWhite fibers	

Look at the back of the page for the rest of the exam

T- Complete the following statements	
1- Inflammation is defined as	

2- Granuloma is defined as	
	(2 Marks)
3- Causes of cloudy swelling are:	(3 Marks)
a	
b	
C	
4- Types of inflammation include:	(3 Marks)
a	
b	
c	

Name of the examiner: Prof. Bothaina M. Khidr

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	A	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	
3.	Escape of blood outside the blood vessels or cardiac chambers.	
4.	new healthy tissue is replacing the damaged one	
5.	The nucleus shrinks, its chromatin becomes dense and it stains darkly	
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
8.	Accumulation of excess water inside the cells	
9.	Accumulation of excess neutral fat in parenchymatous cells	
10	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

Look at th	e back	of the	page	for the	e rest of	the exan
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9- Which cell is a connective tia. Kupffer cellsc. Langerhans cell	ssue fixed macrophage? b. Histioc d. Microgli	
c. Neuroglia II- Complete the followings: 1- The function of fibroblasts a	forming a myelin in the peri b. Basket cel d. Ganglion (10 Marks) re:	pheral nervous system? l
a	b, phage are: b, retory glands are:	
 4- The two types of mast cells are: a. 5- The two types of fat cells are: a. 6- Osteoclast cells are formed by 7- Naked nerve fiber means 8- In a neuron, the rough endopl 9- The tubulo-acinar glands are a. 	b b fusion of: asmic reticulum is termed	•
III. Answer only ONE of the follo1- Types and functions of n2- Difference between spins	wings with drawings	(5 Marks)

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

<u>Part I – </u>	Histology
I-Choose the most appropriate answer for ea	
1- What is the shape of the epithelial cells	
a. Squamous	b. Cuboidal
c. Stratified	d. Columnar
2- Which muscle type consists of long, cy	lindrical cells with multiple nuclei located a
the periphery of the cell?	
a. Smooth	b. Skeletal
c. Cardiac	d. All are correct
3- Which type of tissue forms glands?	
a. Epithelial	b. Nervous
c. Connective	d. Muscular
4- The minute passageways in the bony r with each other are called:	natrix that allow osteocytes to communicate
a. Lamellae	b. Osteons
c. Lacunae	d. Canaliculi
5- The two types of cells which exist in ne	rvous tissue are:
a. Dendrites and axons	b. Satellite cells and neurons
c. Nerve processes and nerve fibers	d. Neurons and glia cells
6- What is the surface modification seen on t	the cells of the epididymis?
a- Microvilli	b- Stereocilia
c- Cilia	d- Both a & b
7- Which of the following is NOT a fiber to	found in connective tissue?
a. Collagen fiber	b. Reticular fiber
c. Elastic fiber	d. Purkinje fiber
8- Which fiber type has more myoglobin?	
a- Red fibers	b- White fibers
c- Intermediate fibers	d- All of the above

Look at the back of the page for the rest of the exam

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

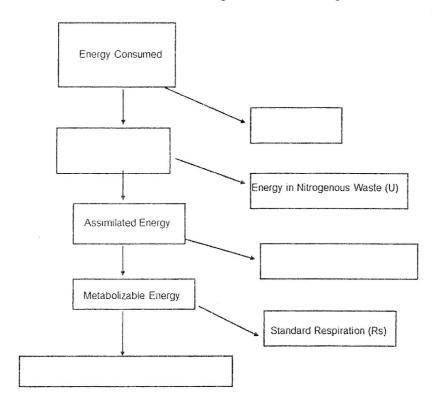
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

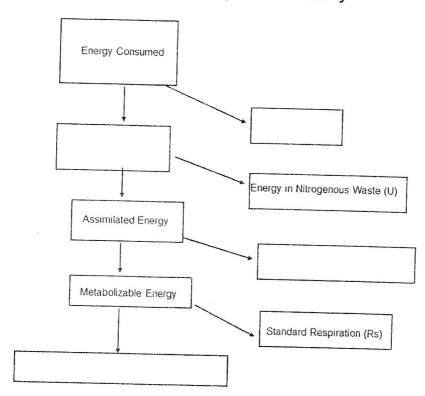


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

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Zoology Dept.

Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

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2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

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Level:	

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D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

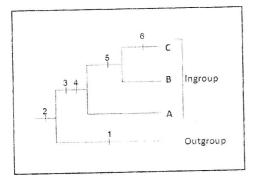
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

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e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding

34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of

- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

of the brain.	
hormones such as	
ta are and	
ear are known as	tishes
ınd release gametes in	ito body
mOsmol/l to	
n to import & Cl	
consuming migration.	•
ect one with False (F	·) (5
C-1-	/ \
nature fish.	() ()
ge over time	()
of the premaxilla	()
in that in 200	()
in that in 20C.	()
with high proportion	,
eir life.	()
	()
% of sea water	()
I epithelium of	()
	<i>I</i> \
cntnyes	()
	ichthyes

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

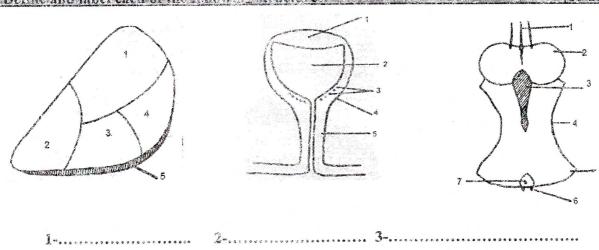
هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes.

- 4. Diagrammatically show the structure of lateral compound eye of vertebrate.
- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and tabet each of the following structures: (10 degree)



Best wishes.....

JUL.

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par	
1 (1	ionse th o best correct answ er		(10 degree)
* ec	Scales in the sharks are:		-
	a- Cycloid	C-	Placoid
	b- Ctenoid	d-	Ganoid
200	One of the following is converted into	o thyroid gla	and of vertebrates:
	a- Endostyle	E. ox	Epipharyngeal groove
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands
3-	The thermoreceptor in branchioston	ia is:	
	a- Eye spots	C-	infnudibular organ
	b- Cophalic pigments	ď-	Kollickers pit
4-	Excretion in vertebrates takes place	by:	
	a- Unpaired kidney		
	b- Unpaired pronephron		
	c- Paired mesonephric kidneys		
	d- Paired mesonephric and meta	inephric kid	neys
5-	The pineal organ in lampreys is:	27	
	a- Present immediately behind t		
	b- Present immediately behind t		
	c- Present between the eye and	the nostril	•
	d- Absent		, e 4 , B , W
5-	Each gill pouch in petromyzon comm		
	a- Gill lamella	Ça	External gill slits
	b- Gill arches		Internal gill slits
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t
	a- Forebrain		lindbrain
	b- Midbrain		Viedulia oblongata
8-	Intermediates between cephalochore	lates and ver	rtebrates:
		is c-branchi	ostoma d- Ammocoete larva
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane
10-	The teeth in frog are meant for:	nr.	ring d-Cutting
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting
		1.28	to me wrong one;
	h is an anamniote animal	n a mala da	
	e term vertebrata is synonymous to ci		than a raise
3. III	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Committee	than 2 pans tha works of Ordovision
			int ivers or vigorical
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de veren da de de	sematave for the second of the for
it. IVA	uscies of trunk and tail in performation to cartilage surrounding the buccal fur	arcarrenge	meron is annular cartileas
	ic carmage surrounding the outcut to dicoagulant in petromyzon is secreted		
		TAN BUREFALLING	Signature and the comments
	e eggs of lampreys are Teloleithal		
IAF. II	n frog stomach is U shaped		

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer th	ie follov	ving q	uestions:-
-----------	-----------	--------	------------

-The term aquaculture refers to the cultivation of - Aquaclture is estimated to contribute	1-	Complete:- (10	Marks)
1983. In static freshwater ponds, the water supply may be from		-The term aquaculture refers to the cultivation of	
- In static freshwater ponds, the water supply may be from		- Aquaclture is estimated to contribute tons in fisl	h production in
In brackish water ponds there is a system of		1983.	
In brackish water ponds there is a system of		- In static freshwater ponds, the water supply may be from	
In culture in recirculatory system, water is			
In culture in recirculatory system, water is		- In brackish water ponds there is a system of	to control the
recirculted, often after			
recirculted, often after		- In culture in recirculatory system, water is con	tinuously and
- Any existing			•
envisaged for fish farm.		- The soil in the area selected for fish farm should be	• • • • • • • • • • • • • • • • • • • •
envisaged for fish farm.		- Any existing line must be excluded from	the area
- The site of fish farm should be in the			
- The site of fish farm should be in the		are essential for operating major fish farms	s efficiently.
- The fish farm should be sited primarily in areas unsuited to other			
Transport of feed from the			
Transport of feed from the		- The fish farm should be sited primarily in areas unsuited to oth	er
		uses.	
- Sites should be selected for fish farms only where water of the required		- Transport of feed from the to the ponds and	l of the
2- Write on:- (10 Marks) (a) Different kinds of aquaculture. (b) Causes of mortality in fish transportation. 3-Mention only 5 of: (10 Marks) (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (10 Marks) (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.		to the holding ponds should involve short hau	ling distances.
2- Write on:- (10 Marks) (a) Different kinds of aquaculture. (b) Causes of mortality in fish transportation. 3-Mention only 5 of: (10 Marks) (a) Objectives of aquaculture. (b) Economic and social factors affecting selection of sites for aquaculture. 4-What are: (10 Marks) (a) The required geotechnical data for fish farm. (b) The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.		- Sites should be selected for fish farms only where water of the re	equired
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(b)The important climatological factors needed for the site of fish farm. 5- Mention: (10 Marks) (a)The desirable characteristics of aquaculture organisms.		(a)The required geotechnical data for fish farm.	()
5- Mention: (10 Marks) (a) The desirable characteristics of aquaculture organisms.			farm.
(a) The desirable characteristics of aquaculture organisms.			
		(a) The desirable characteristics of aquaculture organisms.	,
		-	

Good Luck

Dept. of Zoology

Faculty of Science



Final exam of invertebrate (220Z)2018

Total make 50

Assiut University

Time allowed:Two hours

Answer the following questions	
Q1 Choose the correct answer 1). The digestive system (gut) of Cnidaria is made	(20 mark one for each)
a) mesoglea b) epidermis	c) mesoderm d) gastrodermis, and the holdfast or attachment organ is called
a-strobila, scolex b- scolex, opisthaptor.	c- opisthaptor, cercaria d- cercaria, strobila.
3-Which characteristic makes rotifers different from re	oundworms?
a. have bilateral symmetry b. have rings of cilia around	the mouth c. are pseudocoelomates
d. live in freshwater habitats	
B. Mouth, crop, gizzard, pharynx, intes C. Mouth, pharynx, crop, gizzard, intes D. Mouth, crop, gizzard, stomach, anus 5-The clitellum is used for all of the following exc A. acts as a cocoon where the fertilized B. Houses the testes and the ovaries C. secretes a mucus that holds worms in 6. Schistosomiasis is a disease that humans can contra a. Trichinella worms b- trematodes	tine, anus cept egg develops n place ct from exposure to which type flatworm?
7-When cattle contract a tapeworm, what have they m	
a. water infected by trematodes	b. grass that contains proglottid sections
c. soil particles that contain turbellarians	d. raw or undercooked pork
	Tecator ; blood Interobius ; blood
a) Micronucleus b) contractile vacuole c) pellicle d	gullet
10- Which of the following is autotrophic?	

1

a) Paramecium b) foraminiferac) ameba d) euglena

Dept. of Zoology

Faculty of Science



Final exam of invertebrate (220Z)2018

Total make 50

Assiut University

Time allowed:Two hours

Answer the	following question	S	
Q1 Choose the c	orrect answer	(20 mar	k one for each)
a) mesoglea		made of c) mesoderm ne, and the holdfast o	
a-strobila, scolex	b- scolex, opisthaptor.	<i>c</i> - opisthaptor, cercaria	<i>d</i> - cercaria, strobila.
3-Which characteristi	c makes rotifers different fr	om roundworms?	
a. have bilateral symn	netry b. have rings of cilia arc	ound the mouth c. are pseudocc	pelomates
d. live in freshwater h	abitats		
A. Mout B. Mout C. Mout D. Mout 5-The clitellum is us A. acts a B. House C. secret	h, pharynx, intestine, crop, h, crop, gizzard, pharynx, h, pharynx, crop, gizzard, h, crop, gizzard, stomach, sed for all of the followings a cocoon where the fertiles the testes and the ovaries a mucus that holds work	intestine, anus intestine, anus anus g except lized egg develops	n type flatworm?
a. Trichinella worms	b- tremato	odes c- turbellarian	d. cestodes
7-When cattle contrac	ct a tapeworm, what have th	ney most likely consumed?	
a. water infected by tr	ematodes	b. grass that contains prog	glottid sections
c. soil particles that co	ntain turbellarians	d. raw or undercooked po	rk
a) <i>Enterobiu<u>s</u></i> ; diges	gested food	b) Necator; blood d) Enterobius; blood ss water?	
a) Micronucleus b) co	ontractile vacuole c) pellic	cle d) gullet	
10- Which of the fol	lowing is autotrophic?		
a) Paramecium b) for	raminiferac) ameba d) eugl	lena	

1

9- Which cell is a connective tissue fix	ed macrophage?	
a. Kupffer cells	b. Histiocyte	
c. Langerhans cell	d. Microglia	
10- Which of the following is forming	g a myelin in the peripher	al nervous system?
a. Schwan cell	b. Basket cell	Add to the second
c. Neuroglia	d. Ganglion	A STATE OF THE STA
II- Complete the followings:	(10 Marks)	•
1- The function of fibroblasts are:	Large words and the find home more &	
a b		
0.04		
a b	, c	
3- The two types of mucous secretory	glands are:	
a b		
4- The two types of mast cells are:	3	
a b		
5- The two types of fat cells are:		
a b		
6- Osteoclast cells are formed by fusion	on of:	
All I I was Charmons		
8- In a neuron, the rough endoplasmi	ic reticulum is termed	
9. The tubulo-acinar glands are class	mea mo:	
a b		
III. Answer only ONE of the following	gs with drawings (5 Marks)
1- Types and functions of neur	oglia proper	
2- Difference between spinal ar	id sympathetic ganglia 🛒	4

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	\mathbf{A}	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	•
3.	Escape of blood outside the blood vessels or cardiac chambers.	
	new healthy tissue is replacing the damaged one	
5.	The nucleus shrinks, its chromatin becomes dense and it stains	•
	darkly .	· • • • • • • • • • • • • • • • • • • •
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
	Accumulation of excess water inside the cells	•
9.	Accumulation of excess neutral fat in parenchymatous cells	
10.	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

Look at the back of the page for the rest of the exam

71- Complete the following statements		
1- Inflammation is defined as		
		(2 Marks)
2- Granuloma is defined as		
		(2 Marks)
•••••	Later of the second	
3- Causes of cloudy swelling are:	anne " ()	(3 Marks)
a	*	
b		
c	•	
4- Types of inflammation include:		(3 Marks)
a	trymidence exite	
b		
c.	sentition is	Soften en en en en en en en

Name of the examiner: Prof. Bothaina M. Khidr

Assiut University Faculty of Science
Department of Zoology
Date: 10th May 2018
Time: 2 hours



كلية العلوم قسم علم الديوان

Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

Part I –	- Histology	,
I-Choose the most appropriate answer for ea	ash of the following at at	
1- What is the shape of the epithelial cells	s in a mesothelium?	1ts: (10 Marks)
a. Squamous	b. Cuboidal	•
~	d. Columnar	
2- Which muscle type consists of long, cy	dindrical cells with multiple	nuclei located a
the periphery of the cell?	-	
a. Smooth	b. Skeletal	
c. Cardiac	d. All are correct	
3- Which type of tissue forms glands?		•
a. Epithelial	b. Nervous	
c. Connective	d. Muscular	
· · · · · · · · · · · · · · · · · · ·		
4- The minute passageways in the bony n with each other are called:	natrix that allow osteocytes	to communicate
a. Lamellae	b. Osteons	
c. Lacunae	d. Canaliculi	•
5- The two types of cells which exist in ne	rvous tissue are:	
a. Dendrites and axons	b. Satellite cells and no	curons
c. Nerve processes and nerve fibers	d. Neurons and glia ce	
6- What is the surface modification seen on t	he cells of the epididymis?	•
a- Microvilli	b- Stereocilia	
c- Cilia	d-Both a & b	
7- Which of the following is NOT a fiber f	ound in connective tissue?	
a. Collagen fiber	b. Reticular fiber	
c. Elastic fiber	d. Purkinje fiber 🐪	
8- Which fiber type has more myoglobin?		
a- Red fibers	bWhite fibers	
c- Intermediate fibers	d- All of the above	

Look at the back of the page for the rest of the exam

T- Complete the following statements	
1- Inflammation is defined as	
2- Granuloma is defined as	
	(2 Marks)
3- Causes of cloudy swelling are:	(3 Marks)
2	
b	
c	
4- Types of inflammation include:	(3 Marks)
a	
b	
c	

Name of the examiner: Prof. Bothaina M. Khidr

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	A	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	
3.	Escape of blood outside the blood vessels or cardiac chambers.	
4.	new healthy tissue is replacing the damaged one	All the second
5.	The nucleus shrinks, its chromatin becomes dense and it stains	
	darkly	
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
8.	Accumulation of excess water inside the cells	
9.	Accumulation of excess neutral fat in parenchymatous cells	,
10.	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
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4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

I	Look a	t the	back	of t	he	nage	for	the	rest	of	the	exam
. 8	WOOK U	6 6116	CARCIN	()1	110	1 mg	101	1110	8 CIJ C	O.	EIIC	CALLERIE

9- Which cell is a connective tia. Kupffer cellsc. Langerhans cell	ssue fixed macrophage? b. Histioc d. Microgli	
c. Neuroglia II- Complete the followings: 1- The function of fibroblasts a	forming a myelin in the peri b. Basket cel d. Ganglion (10 Marks) re:	pheral nervous system? l
a	b, phage are: b, retory glands are:	
 4- The two types of mast cells are: a. 5- The two types of fat cells are: a. 6- Osteoclast cells are formed by 7- Naked nerve fiber means 8- In a neuron, the rough endopl 9- The tubulo-acinar glands are a. 	b b fusion of: asmic reticulum is termed	•
III. Answer only ONE of the follo1- Types and functions of n2- Difference between spins	wings with drawings	(5 Marks)

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

Part	I – Histology
	each of the following statements: (10 Marks)
1- What is the shape of the epithelial c	
a. Squamous	b. Cuboidal
c. Stratified	d. Columnar
	cylindrical cells with multiple nuclei located a
the periphery of the cell?	
a. Smooth	b. Skeletal
c. Cardiac	d. All are correct
3- Which type of tissue forms glands?	
a. Epithelial	b. Nervous
c. Connective	d. Muscular
4- The minute passageways in the bon with each other are called:	y matrix that allow osteocytes to communicate
a. Lamellae	b. Osteons
c. Lacunae	d. Canaliculi
5- The two types of cells which exist in	nervous tissue are:
a. Dendrites and axons	b. Satellite cells and neurons
c. Nerve processes and nerve fibers	
6- What is the surface modification seen of	on the cells of the epididymis?
a- Microvilli	b- Stereocilia
c- Cilia	d- Both a & b
7- Which of the following is NOT a fibe	er found in connective tissue?
a. Collagen fiber	b. Reticular fiber
c. Elastic fiber	d. Purkinje fiber
8- Which fiber type has more myoglobin?	
a- Red fibers	b- White fibers
c- Intermediate fibers	d- All of the above

Look at the back of the page for the rest of the exam

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

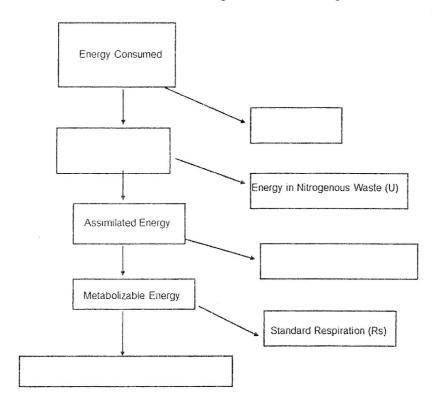
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

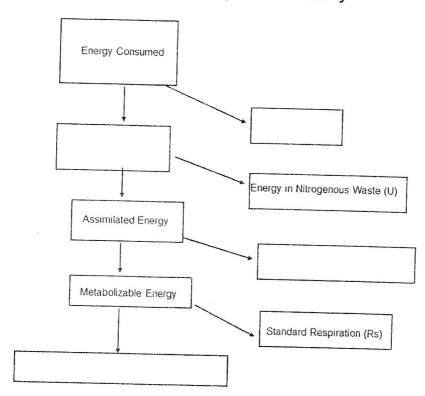


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

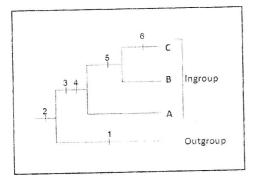
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - a -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	
	6.	Fishes breed at regular intervals during a season within a year are known as	fishes
	7.	Cyclostomata have one with no genital and release gametes int cavity.	o body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
1.	G	rowth rate of immature fish are much faster than those of mature fish.	()
2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilla levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males(
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

١

Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two par			
1 (1	ionse th o best correct answ er		(10 degree)		
* ec	Scales in the sharks are:		-		
	a- Cycloid	C-	Placoid		
	b- Ctenoid	d-	Ganoid		
200	One of the following is converted into	o thyroid gla	and of vertebrates:		
	a- Endostyle	E. ox	Epipharyngeal groove		
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands		
3-	The thermoreceptor in branchioston	ia is:			
	a- Eye spots	C-	infnudibular organ		
	b- Cophalic pigments	ď-	Kollickers pit		
4-	Excretion in vertebrates takes place	by:			
	a- Unpaired kidney				
	b- Unpaired pronephron				
	c- Paired mesonephric kidneys				
	d- Paired mesonephric and meta	inephric kid	neys		
5-	The pineal organ in lampreys is:	27			
	e- Present immediately behind the nostril				
	b- Present immediately behind t				
	c- Present between the eye and	the nostril	•		
	d- Absent		, e 4 , B , W		
5-	Each gill pouch in petromyzon comm				
	a- Gill lamella	Ça	External gill slits		
	b- Gill arches		Internal gill slits		
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t		
	a- Forebrain		lindbrain		
	b- Midbrain		Viedulia oblongata		
8-	Intermediates between cephalochore	lates and ver	rtebrates:		
		is c-branchi	ostoma d- Ammocoete larva		
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas		
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane		
10-	The teeth in frog are meant for:	nr.	ring d-Cutting		
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting		
		1.28	to me wrong one;		
	h is an anamniote animal	n a mala da			
	e term vertebrata is synonymous to ci		than a raise		
3. III	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Commit in t	than 2 pans tha works of Ordovision		
			int ivers or vigorical		
O. MAR	5. Exoskeleton in lampreys is cartilaginous				
6. Muscles of trunk and fail in petromyzon are arranged in D shaped myotomes					
	7. The cartilage surrounding the buccal funnal in Petromyzon is annular cartilage				
8. Anticoagulant in petromyzon is secreted by mucous glands					
	e eggs of lampreys are Teloleithal				
IAF. II	n frog stomach is U shaped				

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
------------	-----------	-------------

1-	Complete:-	(10 Marks)			
	-The term aquaculture refers to the cultivation of				
	- Aquaclture is estimated to contribute tons in	fish production in			
	1983.				
	- In static freshwater ponds, the water supply may be from	,			
	and				
	- In brackish water ponds there is a system of	to control the			
	and				
	- In culture in recirculatory system, water is	continuously and			
	recirculted, often after to the fish pond.				
	- The soil in the area selected for fish farm should be	•••••			
	- Any existing line must be excluded from the area envisaged for fish farm.				
	are essential for operating major fish farms efficiently.				
	- The site of fish farm should be in the of transportation				

	- The fish farm should be sited primarily in areas unsuited to other				
	uses.				
	- Transport of feed from the to the ponds and of the				
	to the holding ponds should involve short hauling distances.				
	- Sites should be selected for fish farms only where water of th	e required			
	is available.				
	2- Write on:-	(10 Marks)			
	(a) Different kinds of aquaculture.				
	(b) Causes of mortality in fish transportation.				
	3-Mention only 5 of:	(10 Marks)			
	(a) Objectives of aquaculture.				
	(b) Economic and social factors affecting selection of sites for aquaculture.				
4-	-What are:	(10 Marks)			
)	(a)The required geotechnical data for fish farm.				
1	(b) The important climatological factors needed for the site of	fish farm.			
	- Mention:	(10 Marks)			
	(a) The desirable characteristics of aquaculture organisms.	,			
	(b) The criteria for selection of species for culture.				

Good Luck

11 Protists are extremely diverse and thus pose a challenge to their classification. Three o	f the
four statements are true concerning protists and their classification. Select the exception	

- . A) The Kingdom Protista contains unicellular, colonial, and multicellular, members
- . B) The Kingdom Protista contains autotrophs and heterotrophs.
- C) The Kingdom Protista contains members that have chloroplasts
- . D) The Kingdom Protista contain eukaryotes and prokaryotes.

12- The cavity of cnidarians is called:

a-Spongocoel

b-Gastrovascular cavity

c-Haeomocoel

d-None of these

13- Hydra has no special structures for:

a)Attachment b) Food capture c) Respiration d) Offence and defence

14-Cells of Hydra possessing flagella and pseudopodia are:

a)Nematocysts b) Secretory cellsc)Epitheliomuscular cells d)Nutritivemuscular cell

15-In blastostyles of obelia theperisarc forms

a)Blastotheca

b)Hydrotheca

c)Gonotheca

d)-None of these

16-Some of the nematodes are successful as endoparasites because their bodies are covered by a

a)layer of cilia. b)cyst layer. c)skin with glandular cells.d) nonliving cuticle.

17-The salt and water balance organs found in Platyhelminthes are

a. coelomoducts b. protonephridia. c. pseudonephridia d. Renette Cells

18-In some sponges, asexual reproduction can occur by

a) bud formation

b)regeneration following fragmentation

c)formation of gemmules

d)all of the above

19-Which of the following statements is TRUE?

- a). Tapeworms lack a digestive system
- b). A digenetic trematode is one that depends on two or more hosts to complete its life cycle
- c). In nematodes the sexes are generally separate with females being larger than males
- d) All the above are true.

20- A strobila is a structure found in the life cycle of members of the class

- a) Hydrozoa b).Scyphozoa.
- C) Cubozoa
- d) .Anthozoa

Dept. of Zoology

Faculty of Science



Final exam of invertebrate (220Z)2018

Total make 50

a) Paramecium b) foraminiferac) ameba d) euglena

Assiut University

Time allowed:Two hours

Answer the follo	wing questions				
Q1 Choose the correct answer			(20 mark one for each)		
1). The digestive systema) mesoglea2- The chain of proglottids ithe	b) epidermis		c) mesoderm and the holdfast or		
a-strobila, scolex b- so	colex, opisthaptor.	c- opis	thaptor, cercaria	d- cercaria, strobila.	
3-Which characteristic make	es rotifers different fro	m roundwo	orms?		
a. have bilateral symmetry b	. have rings of cilia arou	und the mo	uth c. are pseudocoe	elomates	
d. live in freshwater habitats	· •				
B. Mouth, crop C. Mouth, pha D. Mouth, crop 5-The clitellum is used fo A. acts as a coo B. Houses the C. secretes a m 6. Schistosomiasis is a disease	coon where the fertilize testes and the ovaries nucus that holds worm se that humans can cor	ntestine, and nus gexcept zed egg de ns in place ntract from	us velops exposure to which		
a. Trichinella worms	b- trematod	des	c- turbellarian	d. cestodes	
7-When cattle contract a tap	eworm, what have the	ey most like	ely consumed?		
a. water infected by tremato	des	b. gras	s that contains progl	ottid sections	
c. soil particles that contain t	urbellarians	d. raw	or undercooked por	k	
 8). Hookworms are in the a) Enterobius; digested c) Necator; digested for 9- Which organelle function a) Micronucleus b) contraction 10- Which of the followin 	food book of cons to remove excess tile vacuole c) pellicl	o) Necator d) Enterobi water?	; blood us ; blood		
zo man oi țiie luiluwiii	S is autoriopine.				

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Dept. of Zoology

Faculty of Science



Final exam of invertebrate (220Z)2018

Total make 50

Assiut University

Time allowed:Two hours

Answer the f	ollowing questions				
Q1 Choose the co		- ·	(20 mark one for each)		
a) mesoglea		c) mesoderm c, and the holdfast or			
a-strobila, scolex	b- scolex, opisthaptor.	c- opisthaptor, cercaria	d- cercaria, strobila.		
3-Which characteristic	makes rotifers different fro	m roundworms?			
a. have bilateral symme	etry b. have rings of cilia arou	und the mouth c. are pseudocoe	elomates		
d. live in freshwater ha	bitats				
A. Mouth B. Mouth C. Mouth D. Mouth 5-The clitellum is use A. acts as B. Houses C. secrete	, pharynx, intestine, crop, go, crop, gizzard, pharynx, ir, pharynx, crop, gizzard, ir, crop, gizzard, stomach, and the following a cocoon where the fertilizes the testes and the ovaries a mucus that holds worm	ntestine, anus ntestine, anus nus except zed egg develops	type flatworm?		
a. Trichinella worms	b- trematod	des c- turbellarian	d. cestodes		
7-When cattle contract	a tapeworm, what have the	ey most likely consumed?			
a. water infected by tre	matodes	b. grass that contains progl	ottid sections		
c. soil particles that con	tain turbellarians	d. raw or undercooked por	k		
a) Enterobius; diggc) Necator; digeste9- Which organelle fu	ested food ded food ded food ded food descriptions to remove excess	d) Enterobius ; blood water?			
•	ntractile vacuole c) pellicl	e a) guilet			
	owing is autotrophic?				
a) Paramecium b) fora	miniferac) ameba d) eugle	na			

1

9- Which cell is a connective tissue fix	Which cell is a connective tissue fixed macrophage?				
a. Kupffer cells	b. Histiocyte				
c. Langerhans cell	d. Microglia				
10- Which of the following is forming	g a myelin in the peripher	al nervous system?			
a. Schwan cell	b. Basket cell	Add to the second			
c. Neuroglia	d. Ganglion	A STATE OF THE STA			
II- Complete the followings:	(10 Marks)	•			
1- The function of fibroblasts are:	Large words and the published the St.				
a b					
0.04					
a b	, c				
3- The two types of mucous secretory	glands are:				
a b					
4- The two types of mast cells are:	3				
a b					
5- The two types of fat cells are:					
a b					
6- Osteoclast cells are formed by fusion	on of:				
All I I was Charmons					
8- In a neuron, the rough endoplasmi	ic reticulum is termed				
9. The tubulo-acinar glands are class	mea mo:				
a b					
III. Answer only ONE of the following	gs with drawings (5 Marks)			
1- Types and functions of neur	oglia proper				
2- Difference between spinal ar	id sympathetic ganglia 🛒	4			

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	\mathbf{A}	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	•
3.	Escape of blood outside the blood vessels or cardiac chambers.	
	new healthy tissue is replacing the damaged one	
5.	The nucleus shrinks, its chromatin becomes dense and it stains	•
	darkly .	· • • • • • • • • • • • • • • • • • • •
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
	Accumulation of excess water inside the cells	•
9.	Accumulation of excess neutral fat in parenchymatous cells	
10.	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

Look at the back of the page for the rest of the exam

71- Complete the following statements			
1- Inflammation is defined as			
			(2 Marks)
	; · •	,	i ii
2- Granuloma is defined as			
			(2 Marks)
•••••	t careras chares		
3- Causes of cloudy swelling are:	rome i vis		(3 Marks)
a		· ·	*
b			•
c	7 · · · · · · · · · · · · · · · · · · ·		
4- Types of inflammation include:			(3 Marks)
a	tryon denne erate.	, i	*
b			
c. ,	Senis Albert Arth	Gr fey	

Name of the examiner: Prof. Bothaina M. Khidr

Assiut University Faculty of Science
Department of Zoology
Date: 10th May 2018
Time: 2 hours



كلية العلوم قسم علم الديوان

Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

Part I –	- Histology	,
I-Choose the most appropriate answer for ea	ash of the following at at	
1- What is the shape of the epithelial cells	s in a mesothelium?	1ts: (10 Marks)
a. Squamous	b. Cuboidal	•
~	d. Columnar	
2- Which muscle type consists of long, cy	dindrical cells with multiple	nuclei located a
the periphery of the cell?		
a. Smooth	b. Skeletal	
c. Cardiac	d. All are correct	
3- Which type of tissue forms glands?		•
a. Epithelial	b. Nervous	
c. Connective	d. Muscular	
· · · · · · · · · · · · · · · · · · ·		
4- The minute passageways in the bony n with each other are called:	natrix that allow osteocytes	to communicate
a. Lamellae	b. Osteons	
c. Lacunae	d. Canaliculi	•
5- The two types of cells which exist in ne	rvous tissue are:	
a. Dendrites and axons	b. Satellite cells and no	curons
c. Nerve processes and nerve fibers	d. Neurons and glia ce	
6- What is the surface modification seen on t	he cells of the epididymis?	•
a- Microvilli	b- Stereocilia	
c- Cilia	d-Both a & b	
7- Which of the following is NOT a fiber f	ound in connective tissue?	
a. Collagen fiber	b. Reticular fiber	
c. Elastic fiber	d. Purkinje fiber 🐪	
8- Which fiber type has more myoglobin?		
a- Red fibers	bWhite fibers	
c- Intermediate fibers	d- All of the above	

Look at the back of the page for the rest of the exam

T- Complete the following statements	
1- Inflammation is defined as	
2- Granuloma is defined as	
	(2 Marks)
3- Causes of cloudy swelling are:	(3 Marks)
2	
b	
c	
4- Types of inflammation include:	(3 Marks)
a	
b	
c	

Name of the examiner: Prof. Bothaina M. Khidr

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	A	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	
3.	Escape of blood outside the blood vessels or cardiac chambers.	
4.	new healthy tissue is replacing the damaged one	All the grant
5.	The nucleus shrinks, its chromatin becomes dense and it stains	
	darkly	
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
8.	Accumulation of excess water inside the cells	
9.	Accumulation of excess neutral fat in parenchymatous cells	,
10.	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

I	Look a	t the	back	of t	he	nage	for	the	rest	of	the	exam
. 8	WOOK U	6 6116	CARCIN	()1	110	1 mg	101	1110	8 CIJ C	O.	EIIC	CALLERIE

9- Which cell is a connective tia. Kupffer cellsc. Langerhans cell	ssue fixed macrophage? b. Histioc d. Microgli	
c. Neuroglia II- Complete the followings: 1- The function of fibroblasts a	forming a myelin in the peri b. Basket cel d. Ganglion (10 Marks) re:	pheral nervous system? l
a	b, phage are: b, retory glands are:	
 4- The two types of mast cells are: a. 5- The two types of fat cells are: a. 6- Osteoclast cells are formed by 7- Naked nerve fiber means 8- In a neuron, the rough endopl 9- The tubulo-acinar glands are a. 	b b fusion of: asmic reticulum is termed	•
III. Answer only ONE of the follo1- Types and functions of n2- Difference between spins	wings with drawings	(5 Marks)

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

Part	I – Histology
	each of the following statements: (10 Marks)
1- What is the shape of the epithelial c	
a. Squamous	b. Cuboidal
c. Stratified	d. Columnar
	cylindrical cells with multiple nuclei located a
the periphery of the cell?	
a. Smooth	b. Skeletal
c. Cardiac	d. All are correct
3- Which type of tissue forms glands?	
a. Epithelial	b. Nervous
c. Connective	d. Muscular
4- The minute passageways in the bon with each other are called:	y matrix that allow osteocytes to communicate
a. Lamellae	b. Osteons
c. Lacunae	d. Canaliculi
5- The two types of cells which exist in	nervous tissue are:
a. Dendrites and axons	b. Satellite cells and neurons
c. Nerve processes and nerve fibers	
6- What is the surface modification seen of	on the cells of the epididymis?
a- Microvilli	b- Stereocilia
c- Cilia	d- Both a & b
7- Which of the following is NOT a fibe	er found in connective tissue?
a. Collagen fiber	b. Reticular fiber
c. Elastic fiber	d. Purkinje fiber
8- Which fiber type has more myoglobin?	
a- Red fibers	b- White fibers
c- Intermediate fibers	d- All of the above

Look at the back of the page for the rest of the exam

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

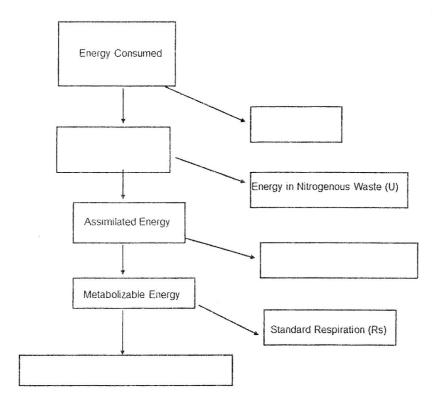
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

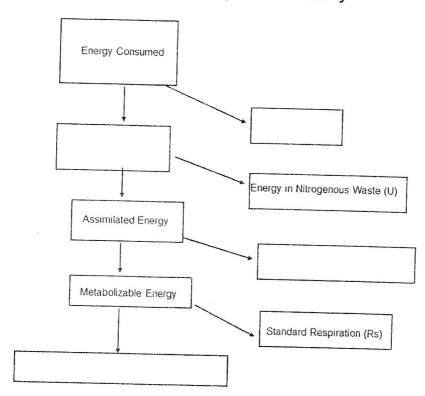


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

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Faculty of Science,
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Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

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Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

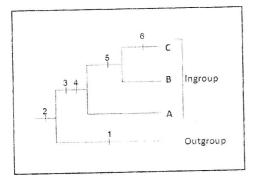
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

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e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - a -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

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Faculty of Science,
Zoology Dept.

level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

	1.	in the blank spaces (5 marks): The internal mechanism that regulates the process of reproduction is known as	
	2.	Gonadotropin-releasing hormones are secreted by of the brain.	
	3.	Fishes spawn once during lifetime are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	
	6.	Fishes breed at regular intervals during a season within a year are known as	fishes
	7.	Cyclostomata have one with no genital and release gametes int cavity.	o body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	10	Fishes of family spawn once after long, energy consuming migration.	
B-		bel the correct statement with True (T) and the incorrect one with False (F)	(5
	ma	arks):	, ,
1.	G	rowth rate of immature fish are much faster than those of mature fish.	()
2.	Ir	n positive allometric growth, the shape of fish does not change over time	()
3.	lr d	n the most highly evolved Elasmobranches, the anterior end of the premaxilla levelops what's called an ascending process.	
4.	٨.	Aicronterus salmoides consumes food at 10C three times than that in 20C.	()
5.	F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6.	Α	Anguillidae and Salmonidae spawn more than once during their life.	()
7.	 -	Hagfishes could not perform as osmoconformers.	()
8.	Λ	NaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9.	a	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
10	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
_		n osmoregulation.	
		the segment answer of each list in the following (20 marks):	

C- Choice the correct answer of each list in the following (

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males(
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

	(NOTE: Exai	n in Two pag			
1 (1	ionse th o best correct answ er		(10 degree)		
* ec	Scales in the sharks are:		-		
	a- Cycloid	C-	Placoid		
	b- Ctenoid	d-	Ganoid		
200	One of the following is converted into	o thyroid gla	and of vertebrates:		
	a- Endostyle	E. ox	Epipharyngeal groove		
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands		
3-	The thermoreceptor in branchioston	ia is:			
	a- Eye spots	C-	infnudibular organ		
	b- Cophalic pigments	ď-	Kollickers pit		
4-	Excretion in vertebrates takes place	by:			
	a- Unpaired kidney				
	b- Unpaired pronephron				
	c- Paired mesonephric kidneys				
	d- Paired mesonephric and meta	inephric kid	neys		
5-	The pineal organ in lampreys is:	27			
	a- Present immediately behind t				
	b- Present immediately behind t				
	c- Present between the eye and t	the nostril	•		
	d- Absent		, e 4 , B , W		
5-	Each gill pouch in petromyzon comm				
	a- Gill lamella	Ça	External gill slits		
	b- Gill arches		Internal gill slits		
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t		
	a- Forebrain		lindbrain		
	b- Midbrain		Viedulia oblongata		
8-	Intermediates between cephalochore	lates and ver	rtebrates:		
		is c-branchi	ostoma d- Ammocoete larva		
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas		
	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane		
10-	The teeth in frog are meant for:	nr.	ring d-Cutting		
27.68	a- Chewing b-Preventing You's in trought the tollowing scatter	c-Tea	ring u-cuting		
		1.28	to me wrong one;		
	h is an anamniote animal	n a mala da			
	e term vertebrata is synonymous to ci		than a raise		
3. IN	vertebrates, the pharyngeal gill slits a e first fossil records of vertebrates we	no Committee	than 2 pans tha works of Ordovision		
			int ivers or vigorical		
O. MAR	oskeleton in lampreys is cartilaginous uscles of trunk and tail in petromyzon	en andre de verenda en de el	sematave for the second of the for		
it. IVA	incres of terms with ear in factority for	arcanaenge	meron is annular cartileas		
	7. The cartilage surrounding the buccal funnal in Petromyzon is annular cartilage				
8. Anticoagulant in petromyzon is secreted by mucous glands					
	e eggs of lampreys are Teloleithal				
IAF. II	n frog stomach is U shaped				

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded frenvisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
-	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b)The criteria for selection of species for culture.	

Good Luck

Q2-Write the Scientific term

(10 mark one for each)

- 1-Common name for the phylum Ctenophora.
- 2- Excretion cells in the phlyumNematoda.
- 3-Structure in parasitic flatworms used for protection in a parasitic environment, like an intestine flagellated cells that line the canals of the sponge4-
- 5-Phylum linked between parazoa and metazoa
- 6- Structures in free-living flatworms that excrete mucus for movement
- 7- Excretion cells in the phylum Platyhelminthes
- 8-In many anemones, the edges of the septa are extended into thread like structures that contain nematocysts and gland cells. These structures are called
- 9--Large central canal of sponge where porocytes open to 10-- A term that refers to Cnidaria and the Cnetophora

Q3-With labbllingdrawing illustrate four only

(8 mark2 for each)

1-Body plane ofMonogenea

2-Structure of excreation unit of Annilida

3- Pody plan of placozoa

4-Body plane of Phylum Nematoda

5- Polyp form and medosa form

Q4- Answer the threeonly following questions

(12 mark4 for each)

- 1- Demonstrate Ascaris life cycle in human-
- 2- Compare between classes of phylum Annilida
- 3-How trematods adapted for parasitism
- 4-Demonstrate Plasmodium life cycle in human

Good luck

أ.د/ أز هار حسين محمد

11 Protists are extremely diverse and thus pose a challenge to their classification. Three o	f the
four statements are true concerning protists and their classification. Select the exception	

- . A) The Kingdom Protista contains unicellular, colonial, and multicellular, members
- . B) The Kingdom Protista contains autotrophs and heterotrophs.
- C) The Kingdom Protista contains members that have chloroplasts
- . D) The Kingdom Protista contain eukaryotes and prokaryotes.

12- The cavity of cnidarians is called:

a-Spongocoel

b-Gastrovascular cavity

c-Haeomocoel

d-None of these

13- Hydra has no special structures for:

a)Attachment b) Food capture c) Respiration d) Offence and defence

14-Cells of Hydra possessing flagella and pseudopodia are:

a)Nematocysts b) Secretory cellsc)Epitheliomuscular cells d)Nutritivemuscular cell

15-In blastostyles of obelia theperisarc forms

a)Blastotheca

b)Hydrotheca

c)Gonotheca

d)-None of these

16-Some of the nematodes are successful as endoparasites because their bodies are covered by a

a)layer of cilia. b)cyst layer. c)skin with glandular cells.d) nonliving cuticle.

17-The salt and water balance organs found in Platyhelminthes are

a. coelomoducts b. protonephridia. c. pseudonephridia d. Renette Cells

18-In some sponges, asexual reproduction can occur by

a) bud formation

b)regeneration following fragmentation

c)formation of gemmules

d)all of the above

19-Which of the following statements is TRUE?

- a). Tapeworms lack a digestive system
- b). A digenetic trematode is one that depends on two or more hosts to complete its life cycle
- c). In nematodes the sexes are generally separate with females being larger than males
- d) All the above are true.

20- A strobila is a structure found in the life cycle of members of the class

- a) Hydrozoa b).Scyphozoa.
- C) Cubozoa
- d) .Anthozoa

Dept. of Zoology

Faculty of Science



Final exam of invertebrate (220Z)2018

Total make 50

a) Paramecium b) foraminiferac) ameba d) euglena

Assiut University

Time allowed:Two hours

Answer the following question	ns		
Q1 Choose the correct answer		(20 maı	k one for each)
 The digestive system (gut) of Cnidaria a) mesoglea b) epidermis The chain of proglottids is collectively called the 		c) mesoderm _, and the holdfast c	
a-strobila, scolex b- scolex, opisthaptor.	<i>c</i> - o	oisthaptor, cercaria	d- cercaria, strobila.
3-Which characteristic makes rotifers different	from round	vorms?	
a. have bilateral symmetry b. have rings of cilia a	around the n	outh c. are pseudoco	pelomates
d. live in freshwater habitats			
A. Mouth, pharynx, intestine, cro B. Mouth, crop, gizzard, pharynx C. Mouth, pharynx, crop, gizzard D. Mouth, crop, gizzard, stomacl 5-The clitellum is used for all of the follow A. acts as a cocoon where the fer B. Houses the testes and the ovar C. secretes a mucus that holds we 6. Schistosomiasis is a disease that humans can	x, intestine, d, intestine, a, anus ing except. tilized egg cries orms in place contract from	anus anus develops se om exposure to which	
a. Trichinella worms b- trema	atodes	c- turbellarian	d. cestodes
7-When cattle contract a tapeworm, what have	they most l	kely consumed?	
a. water infected by trematodes	b. gr	ass that contains prog	glottid sections
c. soil particles that contain turbellarians	d. ra	w or undercooked po	rk
 8). Hookworms are in the genus1_ and a) Enterobius; digested food c) Necator; digested food 9- Which organelle functions to remove exca) Micronucleus b) contractile vacuole c) pel 10- Which of the following is autotrophic? 	b) Necate d) Enterd ess water?	or ; blood bius ; blood	

1

Dept. of Zoology

Faculty of Science



Final exam of invertebrate (220Z)2018

Total make 50

Assiut University

Time allowed:Two hours

Answer the f	ollowing questions	<u>i</u>	
Q1 Choose the co			k one for each)
a) mesoglea		c) mesoderm c, and the holdfast or	
a-strobila, scolex	b- scolex, opisthaptor.	c- opisthaptor, cercaria	d- cercaria, strobila.
3-Which characteristic	makes rotifers different fro	m roundworms?	
a. have bilateral symme	etry b. have rings of cilia arou	und the mouth c. are pseudoco	elomates
d. live in freshwater hal	oitats		
A. Mouth B. Mouth C. Mouth D. Mouth 5-The clitellum is use A. acts as B. Houses C. secrete	, pharynx, intestine, crop, , crop, gizzard, pharynx, ir , pharynx, crop, gizzard, ir , crop, gizzard, stomach, a ed for all of the following a cocoon where the fertilis is the testes and the ovaries is a mucus that holds worm	ntestine, anus ntestine, anus nus g except zed egg develops	type flatworm?
a. Trichinella worms	b- trematod	des c- turbellarian	d. cestodes
7-When cattle contract	a tapeworm, what have the	ey most likely consumed?	
a. water infected by tre	natodes	b. grass that contains prog	lottid sections
c. soil particles that con-	tain turbellarians	d. raw or undercooked por	·k
a) Enterobius ; digec) Necator ; digeste9- Which organelle fu	ested food ded food conctions to remove excess	d) Enterobius; blood water?	
	ntractile vacuole c) pellicl	ie a) guilet	
	owing is autotrophic?		
a) Paramecium b) fora	miniferac) ameba d) eugle	ena	

1

9- Which cell is a connective tissue fix	ed macrophage?	
a. Kupffer cells	b. Histiocyte	
c. Langerhans cell	d. Microglia	
10- Which of the following is forming	g a myelin in the peripher	al nervous system?
a. Schwan cell	b. Basket cell	Add to the second
c. Neuroglia	d. Ganglion	A STATE OF THE STA
II- Complete the followings:	(10 Marks)	•
1- The function of fibroblasts are:	Large words and the published the A	
a b		
0.04		
a b	, c	
3- The two types of mucous secretory	glands are:	
a b		
4- The two types of mast cells are:	3	
a b		
5- The two types of fat cells are:		
a b		
6- Osteoclast cells are formed by fusion	on of:	
Al I I I was Charmons		
8- In a neuron, the rough endoplasmi	ic reticulum is termed	
9. The tubulo-acinar glands are class	mea mo:	
a b		
III. Answer only ONE of the following	gs with drawings (5 Marks)
1- Types and functions of neur	oglia proper	
2- Difference between spinal ar	id sympathetic ganglia 🛒	4

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	\mathbf{A}	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	•
3.	Escape of blood outside the blood vessels or cardiac chambers.	
	new healthy tissue is replacing the damaged one	
5.	The nucleus shrinks, its chromatin becomes dense and it stains	•
	darkly .	· • • • • • • • • • • • • • • • • • • •
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
	Accumulation of excess water inside the cells	•
9.	Accumulation of excess neutral fat in parenchymatous cells	
10.	Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

Look at the back of the page for the rest of the exam

71- Complete the following statements		
1- Inflammation is defined as		
		(2 Marks)
		,
2- Granuloma is defined as		
		(2 Marks)
•••••	Laboration charges	
3- Causes of cloudy swelling are:	anne " ()	(3 Marks)
a	*	
b		
c	•	
4- Types of inflammation include:		(3 Marks)
a	trymidence exite	
b		
c.	sentition is	Soften en en en en en en en

Name of the examiner: Prof. Bothaina M. Khidr

Assiut University Faculty of Science
Department of Zoology
Date: 10th May 2018
Time: 2 hours



كلية العلوم قسم علم الميوان

Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

	Part I – Histology	1
I-Choose the most appropriate answ	war far agab of the following at a	
I-Choose the most appropriate answ 1- What is the shape of the epith	relial calls in a mosotholium?	ments: (10 Marks)
a. Squamous	b. Cuboidal	•
c. Stratified	d. Columnar	.* ,
, and the second	u. Columnar	
2- Which muscle type consists of	flong cylindrical cells with mult	inla nuolai laastad
the periphery of the cell?	ing, cylinarical cens with mun	ipie nuciei jocated a
a. Smooth	b. Skeletal	
c. Cardiac	d. All are correct	
	an in the correct	a Marka
3- Which type of tissue forms gla	ands?	- € •
a. Epithelial	b. Nervous	1
c. Connective	d. Muscular	
		*
4- The minute passageways in th	ne bony matrix that allow osteocy	ites to communicate
with each other are called:	, ,	to communicate
a. Lamellae	b. Osteons	
c. Lacunae	d. Canalículi	
	,	
5- The two types of cells which ex	dist in nervous tissue are:	7.
a. Dendrites and axons	b. Satellite cells ar	d-neurons
c. Nerve processes and nerve		
•		•
6- What is the surface modification	seen on the cells of the epididymis?	
a- Microvilli	b- Stereocilia	•
c- Cilia	d- Both a & b	••
		• 1
7- Which of the following is NOT		e?
a. Collagen fiber	b. Reticular fiber	**************************************
c. Elastic fiber	d. Purkinje fiber	. *
8. Which fiber type has many	Johin 9	
8- Which fiber type has more myogl a- Red fibers	•	
c. Intermediate fibers	bWhite fibers	

Look at the back of the page for the rest of the exam

T- Complete the following statements	
1- Inflammation is defined as	

2- Granuloma is defined as	
	(2 Marks)
3- Causes of cloudy swelling are:	(3 Marks)
a	
b	
C	
4- Types of inflammation include:	(3 Marks)
a	
b	
c	

Name of the examiner: Prof. Bothaina M. Khidr

Part II (Histopathology)

IV- Write the scientific term for the following sentences in column B (10 Marks)

	A	В
1.	Reduction in the size of the cell	
2.	Increase in the number of the cells.	
3.	Escape of blood outside the blood vessels or cardiac chambers.	
4.	new healthy tissue is replacing the damaged one	
5.	The nucleus shrinks, its chromatin becomes dense and it stains darkly	
6.	The cause or causes of any disease.	
7.	The mechanism for development of the disease.	
8.	Accumulation of excess water inside the cells	
9.	Accumulation of excess neutral fat in parenchymatous cells	•
10	. Local death of cells or tissues within living body.	

V- Mention whether each of the following statements is true (T) or false (F) and correct the false ones (5 Marks)

SN	Statement	T or F
1.	Fatty changes are characterized by swelling of the cell and granularity of the cytoplasm.	
2.	In karyorrhexis, the nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.	
3.	In amoebic abscess, the central necrotic core is liquefied by the proteolytic enzymes released from the pus cells.	
4.	Coagulative necrosis occurs in brain and spinal cord.	
5.	Metaplasia is a stable change to another cell type.	

Look at th	e back	of the	page	for th	e rest	of the	exam
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9- Which cell is a connective tia. Kupffer cellsc. Langerhans cell	ssue fixed macrophage? b. Histioc d. Microgli	
c. Neuroglia II- Complete the followings: 1- The function of fibroblasts a	forming a myelin in the peri b. Basket cel d. Ganglion (10 Marks) re:	pheral nervous system? I
a	b, phage are: b, retory glands are:	
 4- The two types of mast cells are: a. 5- The two types of fat cells are: a. 6- Osteoclast cells are formed by 7- Naked nerve fiber means 8- In a neuron, the rough endopl 9- The tubulo-acinar glands are a. 	b b fusion of: asmic reticulum is termed	•
III. Answer only ONE of the follo1- Types and functions of n2- Difference between spins	wings with drawings	(5 Marks)

Assiut University Faculty of Science Department of Zoology Date: 10th May 2018 Time: 2 hours



Final Exam of Histology & Histopathology (212Z) for second year Students (credit hours)

<u>Part I – </u>	Histology				
I-Choose the most appropriate answer for ea					
	What is the shape of the epithelial cells in a mesothelium?				
a. Squamous	b. Cuboidal				
c. Stratified	d. Columnar				
2- Which muscle type consists of long, cy	lindrical cells with multiple nuclei located a				
the periphery of the cell?					
a. Smooth	b. Skeletal				
c. Cardiac	d. All are correct				
3- Which type of tissue forms glands?					
a. Epithelial	b. Nervous				
c. Connective	d. Muscular				
4- The minute passageways in the bony r with each other are called:	natrix that allow osteocytes to communicate				
a. Lamellae	b. Osteons				
c. Lacunae	d. Canaliculi				
5- The two types of cells which exist in ne	rvous tissue are:				
a. Dendrites and axons	b. Satellite cells and neurons				
c. Nerve processes and nerve fibers	d. Neurons and glia cells				
6- What is the surface modification seen on t	he cells of the epididymis?				
a- Microvilli	b- Stereocilia				
c- Cilia	d- Both a & b				
7- Which of the following is NOT a fiber to	found in connective tissue?				
a. Collagen fiber	b. Reticular fiber				
c. Elastic fiber	d. Purkinje fiber				
8- Which fiber type has more myoglobin?					
a- Red fibers	b- White fibers				
c- Intermediate fibers	d- All of the above				

Look at the back of the page for the rest of the exam

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

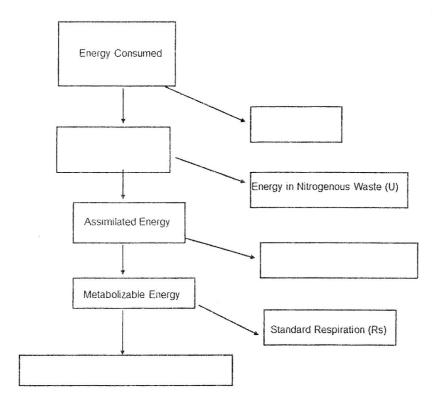
Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

7. Summarize the evolutionary trends of fish scales? (2 marks)

level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

Bioenergetic Hierarchy

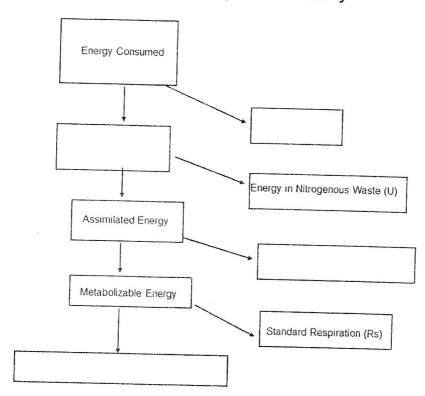


6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

Bioenergetic Hierarchy



6. Mention the equations used in back-calculation of fish length and mention the assumption on which back-calculations from rings of fish scales are based? (2 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level.	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

4. Enumerate the methods of growth rate measurements with criteria of back-calculations? (2 marks)

5. Complete the following flowchart and write the equation expressing it? (2 marks)

Level:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

2. Write short notes on types and causes of fish migrations? (3 marks)

3. How do sharks osmoregulate? (3 marks)

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-* 2017/2018 Time: 2 hours

D- Write the term or the identification of term in the blank cell of the following table? (5 marks):

erm	Identification
1.	A structure designed to allow fish the opportunity to migrate upstream
	over a barrier to fish movement.
Hepatosomatic index	and a survey to his movement.
3. Osmoconformer	
osmocomormer	5
4.	The upper jaw fused to the braincase, and the
	hyomandibular arch is involved in jaw suspension
5. Iteroparity	
6.	
0.	Addition of sperms to eggs then addition of water
7. Cladogram	
8.	Allometry in which allometric coefficient less than 3
9.	Migration from one freshwater habitat to another freshwater one
10. Fecundity-size	
equation	

- E- Answer six of the following questions including the first three questions (15 marks):
- 1. What are the anatomical requirements and feeding strategies for a fish to be called carnivores? Mention examples? (3 marks)

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

35-What are Meristics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

36-What are Morphometrics?

- a) Counts of morphological characteristics such as fin rays and dorsal spines
- b) Linear measurements of morphological characteristics such as eye width
- c) A combination of counts and measurements of morphological characterstics
- d) A genetic method of phylogenetic reconstruction

37- What is a clade?

- a) a clade is a monophyletic assemblage
- b) a clade is a natural assemblage

- c) a clade is a unit of taxa that defines a unit of classification
- d) all of the above

38- How is a clade defined?

- a) by shared characters called apomorphies
- b) by shared derived characters called synapomorphies
- c) by shared characters called homoplasies
- d) by unshared characters called paraphylies

39-Most recently, it was found that the earliest jawed vertebrates were

- a) Chondrichthyes
- b) Placoderms

e) Acamilhoidhans

- d) Osteichthyes
- e) none of the above

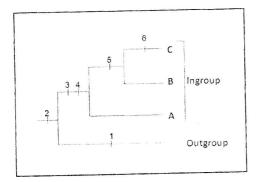
40-Chondrosteans share characters with Chondrichthyans such as:

- a) heterocercal tail and cartilaginous skeleton
- b) spiral valve and swim bladder
- c) Ampullae of Lorenzini and bony tongue
- d) Encased embryos and spicules.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-, 2017/2018 Time: 2 hours

e) Toothless mouth but with pharyngeal teeth and horny pad.



26-In the above figure of the clade, character 6 is

- a) Syanapomorphy
- b) Symplesiomorphy
- c) plesiomorphy
- d) Autapomorphy

27-In the above figure of the clade, characters 3&4 are

- a) Syanapomorphy
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy

28-In the above figure of the clade, character 5 is

- a) Syanapomorphy for A, B& C
- b) Symplesiomorphy
- c) Syanapomorphy for B&C
- d) Autapomorphy for C

29- Overfished stocks have:

- a) Fast growth and good condition
- b) Small average size of fish caught
- c) Both a&b

d) Nothing of the above

30- Gambusia affinis has:

- a) Dorsal fin as modified sucker
- b) Pectoral fins modified as serrate
- c) Anal fin as gonopodium
- d) Pelvic fins modified as claspers

31- Flying fishes have modified fins that help them glide. These are:

- a) pelvic fins
- b) caudal fin
- c) pectoral fin
- d) all of the above

32-Swimbladders are filled

- a) passively with oxygen
- b) passively with nitrogen
- c) actively with oxygen
- d) actively with nitrogen

33-Gonopodium and claspers are structures adapted for

- a) Placental development
- b) Internal fertilization
- c) External fertilization
- d) Offspring feeding
- 34-Fish drinks water, urinates little and expels extra salts via the chloride cells. This scenario describes the osmoregulation strategy of
 - a -----
- a) Shark
- b) Freshwater bony fish
- c) Marine bony fish

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 Time: 2 hours

- b) Faster swimming and larger gape size
- c) Better sensory range
- d) All the above
- e) Only a&c
- 15- Maturity stage 2 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 16- The length-weight relationship is isometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) All the above
- e) Nothing of the above
- 17- Length-weight can be expressed in the following formula:
- a) $W = a * L^b$
- b) $\log_{10} W = \log_{10} a + b * \log_{10} L$
- c) Both of a& b
- d) Nothing of the above
- 18- Stenophagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 19- Energy used to maintain fish healthy is affected by:
- a) Temperature
- b) Dissolved oxygen
- c) Toxins
- d) All the above
- e) Both of a&c

20- Monophagous plankton feeders have:

- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above

21- Teeth in piscivorous fishes are

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

22- Teeth in molluscivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

23- Teeth in plankton feeder fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

24- Teeth in herbivorous fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.
- e) Toothless mouth but with pharyngeal teeth and horny pad.

25- Teeth in scavenger fishes are:

- a) Strong and a cutely pointed.
- b) Single plate
- c) Nibbling mouth with incisiform teeth.
- d) Small teeth feeble.

11-	
Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018 *Time: 2 hours

- b) decreases production of somatomedin
- c) both of a &b
- d) nothing of the above
- 2- Anabolic steroids stimulate growth including:
- a) testosterone and estrogen
- b) progesterone
- c) corticosteroids
- d) both of a& c
- 3- Wintering migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 4- Gametic migration includes:
- a) Cata- and ana-dromous migrtions
- b) Potamo- and oceano-dromous migrations
- c) All the above
- d) Nothing of the above
- 5- Protection mass movements of fishes includes:
- a) Spawning and wintering migrations
- b) Feeding migration
- c) All the above
- d) Nothing of the above
- 6- Maturity stage 1 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 7- Maturity stage 3 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 8- The food supply is a determining factor of:

- a) Distribution and abundance
- b) Condition and rate of growth
- c) Migration and fertility
- d) All the above
- e) Nothing of the above
- 9- The length-weight relationship is negative allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 10- The length-weight relationship is positive allometric when the allometric coefficient is:
- a) Less than 3
- b) Larger than 3
- c) Equal to 3
- d) Nothing of the above
- 11- Europhagous plankton feeders have:
- a) Mixed diet.
- b) A limited sort of food.
- c) One sort of food.
- d) Nothing of the above
- 12- Maturity stage 4 is concerned with
- a) Oocyte development
- b) Vitellogenesis
- c) Oocyte maturation
- d) Spawning
- 13- Oocyte maturation in fishes includes:
- a) Germinal vesicle (nucleus) migration
- b) Resumption of meiosis (cell division)
- c) Water uptake
- d) All the above
- 14- Advantages of indeterminate growth in fishes includes:
- a) Greater efficiency and more food options

Egypt, Assiut University
Faculty of Science,
Zoology Dept.

Level:	

Final Exam in Fish Biology Course No. 280 Second Semester-2017/2018

Time: 2 hours

Answer the following questions (50 marks):

A- Fill in the blank spaces (5 marks):1. The internal mechanism that regulates the process of reproduction is known			
	2.	Gonadotropin-releasing hormones are secreted by of the brain. Fishes spawn once during lifetime are known as	
	3.	Fishes spawn once during mediate are known as	
	4.	The osmo-regulation in diadromous fishes is controlled by hormones such as	
	5.	The very important structural innovations in Gnathostomata are and	fichas
	6.	Fishes breed at regular intervals during a season within a year are known as	n hadu
	7.	Cyclostomata have one with no genital and release gametes into cavity.	body
	8.	In bull sharks, internal osmotic pressure is reduced from mOsmol/l tomOsmol/l.	
	9.	In lamprey, β -type & Cl	
	3. 10	Fishes of family spawn once after long, energy consuming migration.	
B-	La	bel the correct statement with True (T) and the incorrect one with False (F)	(5
_		arks):	
1		rowth rate of immature fish are much faster than those of mature fish.	()
2	le Le	positive allometric growth, the shape of fish does not change over time	()
3	. 11	the most highly evolved Elasmobranches, the anterior end of the premaxilla	()
J	 	evelops what's called an ascending process.	
4	٨	Aicropterus salmoides consumes food at 10C three times than that in 20C.	()
5	. F	ishes with high RGL = species consuming detritus and algae with high proportion if indigestible matter.	()
6	Δ	Anguillidae and Salmonidae spawn more than once during their life.	()
7	-	Hagfishes could not perform as osmoconformers.	()
8	1	JaCl concentration in body fluids of cartilaginous fishes = 80% of sea water	()
9	. c	x-type Chloride Cells pump Na ⁺ & Cl ⁻ OUT of body fluids at gill epithelium of amprey in saltwater.	()
1	0. F	reshwater(FW) Chondrichthyes perform more like FW Osteichthyes	()
	İ	n osmoregulation.	
<i>C</i> -	C	hoice the correct answer of each list in the following (20 marks):	
•	-		

- 1- Pituitary growth hormone in fishes leads to:
- a) increases appetite and increases food conversion efficiency

- 5- The temperature affects (the physiology of animals- morphology-both).
- 6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial-
- 7-A few numbers of young is characteristic of (short lived animals long lived animals both).
- 8- The organisms that eat other organisms are known as (decomposers-producers-consumers).
- 9- The negative impact of man includes (overhunting- Species preservation-biological control-all).
- 10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

- 1- Apply your knowledge on how we can conserve life on the earth.
- 2-Analyze the causes of a stable ecosystem.
- 3- On the light of your study: write three recommendations (توصیات) to prevent thermal pollution.

Good Luck

2- Write the scientific term of the following: (10 marks)

1- The highest population that can be maintained for an indefinite period of time by a particular environment.

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- 2- Animals which depend on internal heat production.
- 3- A relationship in which one organism benefits and the other is harmed.
- 4- All the members of the community plus the physical environment in which they live in.
- 5- A biome with heavy rainfall and constant warmth.
- 6- A biome with sparse rainfall and extreme daily temperature fluctuations.
- 7- The struggle between different species for the same limited resources.
- 8- The role the species plays.
- 9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
- 10- A gas needed by all living things because it is part of the structure of amino acids.

3- Give one reason for each of the following: (10 marks)

- 1- Thermal Pollution.
- 2- Destruction of the ecosystem.
- 3- Dying of animals when temperature rises.
- 4-Considering Camels as highly adapted toward water loss.
- 5-Flight insects have a hard cover.
- 6-About 30% of solar radiation reflects again into sphere.
- 7- Temperature has a bifold effect on organisms.
- 8- Life can exist without sun in the deep water.
- 9-Most micro-arthropods do vertical migration.
- 10-Dcomposers are essential for any ecosystem.

4-Choose the correct answer from the following (5 marks):

- 1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).
- 2-The dominant species is that (possesses the highest biomass- occupies the most space - makes the largest contribution to energy flow - all)
- 3-Light affects (the behavior of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both). اقلب الصفحة من فضلك







Faculty of Science

Assiut University

Dept. of Zoology Exam of Animal Ecology Code No. 225 Z

Year: 2018 Time: 2 hours

Answer the following questions:

1- Write the suitable number from Column A in B: (15 marks)

1-The community	A relationship in which both organisms benefit from each
	other().
2-The ecosystem	Are the plants ().
3- The limiting factor	Is killing and eating an individual of the same species().
4- Range of tolerance	Are those which become active during day time ().
5- Homeostasis	Are those which become active during night
6-Monogamy	Are found on the top of food pyramid().
7-Polyandry	The number of births in a given time period ().
8-Birth rate	Depend on internal heat production().
9- Homeotherms	The formation of a pair bond between one male and one
	female().
10- Mutualism	The individual female gains two or more males().
11-Producers	The range of the environmental conditions within which the organism can tolerate
12-Cannibalism	The maintenance of conditions within the range that the organism can tolerate
13-Diurnal animals	The factor which determines the types of organisms which may exist in that environment
14-Nocturnal animals	Is the structural and functional unit studied in Ecology
15- Carnivorous	An assemblage of populations in a given
animals	area()

اقلب الصفحة من فضلك

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Q2. Answer six only of the following:

(24 marks)

- 1- Compare only by drawing with labeling nervous system in both Penaeus & Anodonta.
- 2- Differentiate among various groups of Bivalvia.
- 3- Illustrate structure & function of mantle within Mollusca.
- 4- Classify Class Maxillopoda and name four genera from different orders.
- 5- Only draw with labeling the blood circulation in both Buthus & Sepia.
- 6- Distinguish digestion in Astropectin & Chiton.
- 7- List the characteristics of Echinodermata.

Q3: Give the reason (s):

(12 marks)

- 1- Limulus is a chelicerate.
- 2- Octopus spreads a cloud of ink suddenly.
- 3- Echinoderms are deuterostomes.
- 4- Coiling doesn't affect the symmetry in gastropods.
- 5- "Tun" state in Tardigrada is unique phenomenon.
- 6- Opisthobranchs have posterior gills.
- 7- Sepia & Octopus are fast swimmers.
- 8- The cosomes producing mucous nets above it.
- 9- Holothuria belongs to Echinodermata.
- 10- Isopoda can incubate embryos.
- 11- Diplopods protect themselves from predation.
- 12- Conus can overcome & engulf large & strong preys.

------End -------

هناء عاطف جودة

بالتوفيق و السداد

TEN only from the following structures: membranous labyrinth 9. Atriopore Nerwromast or lateral line system 10. 2. Wheel organ Ampullae of Lorenzini 11. 3 Velum 12. Air bladder Kollicker's pit 13. Scales in fishes 5. Oral fimbriae or papillae 14. Masseter muscles in frog 6. Spiral valve or typhlosole 15. Tongue in frog 7. Rectal gland or caecal Hindbrain in bony fish 1. Answer Five only of totlowing thomes including numbers 2 and 5 mandatory: (10 degree) By drawing only shows the anatomical features that characterize the Chordata. 2. Draw well labeled diagram of extraembryonic membranes. 3. State the different types of caudal fins or tails in fishes. 4. Diagrammatically show the structure of lateral compound eye of vertebrate.

- 5. Draw the pentadactyl limb structure in the vertebrates.
- 6. Compare between mature gametes in branchiostomta.
- 7. Compare between lower vertebrates and higher vertebrates.
- 8. Discuss the structure of solenocytes of Amphioxus.

5- Define and label each of the following sorreture (10 degree)

Best wishes......

July 11:3

Assiut University. Faculty of Science, Zoology Department, Zoology & Zoology and Chemistry Section,



Course: Vertebrates (I)

Time: 2 hours Level: Second

Course Code: Z232

May 2017/2018 Answer the following questions with labeled drawing if they needed

(NOTE: Exam in Two pages)				
1 (1	ionse th o best correct answ er		(10 degree)	
* ec	Scales in the sharks are:		-	
	a- Cycloid	C-	Placoid	
	b- Ctenoid	d-	Ganoid	
200	One of the following is converted into	o thyroid gla	and of vertebrates:	
	a- Endostyle	E. ox	Epipharyngeal groove	
	b- Pharyngeal gill slits	£3~	Peripharyngeal bands	
3-	The thermoreceptor in branchioston	ia is:		
	a- Eye spots	C-	infnudibular organ	
	b- Cophalic pigments	ď-	Kollickers pit	
4-	Excretion in vertebrates takes place	by:		
	a- Unpaired kidney			
	b- Unpaired pronephron			
	c- Paired mesonephric kidneys			
	d- Paired mesonephric and meta	inephric kid	neys	
5-	The pineal organ in lampreys is:	27		
	a- Present immediately behind t			
	b- Present immediately behind t			
	c- Present between the eye and	the nostril	•	
	d- Absent		, e 4 , B , W	
5-	Each gill pouch in petromyzon comm			
	a- Gill lamella	Ça	External gill slits	
	b- Gill arches		Internal gill slits	
7	In petromyzon optic lobes are presen	nt im:	are to the first terms of the t	
	a- Forebrain		lindbrain	
	b- Midbrain		Viedulia oblongata	
8-	Intermediates between cephalochore	lates and ver	rtebrates:	
		is c-branchi	ostoma d- Ammocoete larva	
9-	The third cyclid in frog is called:	0	alia d Nictitating mambagas	
4.0	a- Pincal eye b-Upper eyelid	c-Over ey	relid d- Nictitating membrane	
10-	The teeth in frog are meant for:	nr.	ring d-Cutting	
27.68	a- Chewing b-Preventing You kin trought the tollowing scatter	c-Tea	ring u-cuting	
		1.28	to me wrone one;	
	h is an anamniote animal	n a mala da		
	e term vertebrata is synonymous to ci		than a raise	
3. IN	vertebrates, the pharyngeal gill slits a	no Committee	than 2 pans tha works of Ordovision	
	d. The first fossil records of vertebrates were found in the rocks of Ordovician			
O. MAR	 Exoskeleton in lampreys is cartilaginous Muscles of trunk and tail in petromyzon are arranged in D shaped myotomes 			
7. The cartilage surrounding the buccal funnal in Petromyzon is annular cartilage				
8. Anticoagulant in petromyzon is secreted by mucous glands 9. The eggs of lampreys are Telofeithai				
			19. In frog stomach is U shaped	
IAF. II	recommendation of the second control of the			

Assiut University
Faculty of Science
Department of Zoology



Fish Farming (Z295) 4th Level students

Time: Two hours

Final Exam2017/2018

Answer the	following	questions:-
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1-	Complete:-	(10 Marks)
	-The term aquaculture refers to the cultivation of	
	- Aquaclture is estimated to contribute tons in	fish production in
	1983.	
	- In static freshwater ponds, the water supply may be from	,
	and	
	- In brackish water ponds there is a system of	to control the
	and	
	- In culture in recirculatory system, water is	continuously and
	recirculted, often after to the fish pond.	
	- The soil in the area selected for fish farm should be	•••••
	- Any existing line must be excluded fr envisaged for fish farm.	om the area
	are essential for operating major fish fa	rms efficiently.
	- The site of fish farm should be in the of transp	
	- The fish farm should be sited primarily in areas unsuited to	other
	uses.	
	- Transport of feed from the to the ponds	
	to the holding ponds should involve short l	nauling distances.
	- Sites should be selected for fish farms only where water of th	e required
	is available.	
	2- Write on:-	(10 Marks)
	(a) Different kinds of aquaculture.	
	(b) Causes of mortality in fish transportation.	
	3-Mention only 5 of:	(10 Marks)
	(a) Objectives of aquaculture.	
	(b) Economic and social factors affecting selection of sites for a	iquaculture.
4-	-What are:	(10 Marks)
)	(a)The required geotechnical data for fish farm.	
1	(b) The important climatological factors needed for the site of	fish farm.
	- Mention:	(10 Marks)
	(a) The desirable characteristics of aquaculture organisms.	,
	(b) The criteria for selection of species for culture.	

Good Luck