	امتحان التحريري / الفصل الدراسي الثاني للعام الجامعي 2024/2023	
القسم الذي يقدم المقرر: الوراثة	اسم المادة: أساسيات الوراثة	كود المقرر: 215ز الزمن: ساعتين
لجنة الممتحنين: أ.د/ محمد يونس	أ.د/ كـــرم أمـــين	المراجع الداخلي: أ.د/ حمدي العارف

السؤال الأول: في الجدول التالي ضع الحرف (T) امام ارقام العبارات الصحيحة والحرف (F) امام ارقام العبارات الخطأ مما يلي: ـ 25 درجة بالتساوي)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					25	24	23	22	21	20	19	18	17	16

1	الأفراد ذات التركيب الوراثي AaBBCcDd تعطي ثمانية أنواع من الجاميطات
2	تنتج حالة XY Female في الإنسان نتيجة فقد الجين SRY من كروموسوم Y
3	في الدجاج النسل الناتج من التهجين RRpp X rrPP يكون جميعه ذو عرف جوزي
4	في نبات الدخان، نسبة الأفراد S_2S_3 الناتجة من التهجين ♀ S_1S_2 X ♂ S_3S_4 تساوي 25٪
5	في نبات الاسبرجس يمكن الحصول على افراد تركيبها Aa من اباء تركيبها الوراثي AA x aa
6	ذكور نحل العسل أحادية المجموعة الكروموسومية (1n) حيث تنتج من بويضة غير مخصبة
7	إذا تزوجت امرأة سليمة من عمي الألوان برجل مصاب بعمي الالوان فإن جميع الأبناء الذكور سوف تكون سليمة
8	في حالة السيادة المشتركة تتساوى النسبة المظهرية مع نسبة الطرز الوراثية في الجيل الثاني
9	تتميز منطقة بدء التضاعف في الكائنات بدائية النواه باحتوائها على تتابعات غنية بالأدنين والثايمين
10	لون الأزهار في نبات حنك السبع من أمثلة الصفات التي تتبع في توارثها حالة السيادة المنعدمة
11	يمكن الحصول على الـ DNA من الـ RNA عن طريق إنزيم Reverse transcriptase
12	انزيم البلمرة DNA polymerase II هو انزيم التضاعف الرئيسي في بكتريا *E. coli*
13	قد يكون للجين الواحد أكثر من وظيفة وذلك عن طريق القص المتنوع لجزيء الـ pre-mRNA
14	يختلف الـ DNA عن الـ RNA في أن السكر الخماسي في الـ DNA هو سكر الريبوز (ribose)
15	يعمل إنزيم التضاعف DNA polymerase III في الاتجاه 5` ← 3`وكذلك في الاتجاه 3` ← 5`
16	إنزيم DNA polymerase- δ (delta) هو المسؤول عن تضاعف الـ DNA في الميتوكوندريا
17	عملية الترجمة الوراثية هي تحويل التتابعات الشفرية الموجودة في الـ mRNA إلى أحماض أمينية
18	تحتوي جينات الكائنات بدائية النواة Prokaryotes على الانترونات introns والاكسونات exons
19	تحتوي كروموسومات الكائنات حقيقية النواة على نقطة واحدة لبدء التضاعف تسمى نقطة الأصل OriC
20	يطلق على المقاطع الممثلة في النسخة النهائية للـ mRNA والتي يتم ترجمتها اسم إنترونات introns
21	السلسة الشفرية codon strand لأحد الجينات قد تكون سلسلة قالب template strand لجينات أخرى
22	في الكائنات مميزة النواة Eukaryotes يقوم إنزيم الـ RNA polymerase II بنسخ جينات الـ rRNA
23	دور الـ tRNA في الخلية هو نقل المعلومات الوراثية من الـ DNA إلى السيتوبلازم حيث يتم تخليق البروتين
24	في الكائنات بدائية النواة Prokaryotes تبدأ عملية الترجمة مباشرة لخيط الـ mRNA
25	تعمل بروتينات الـ SSB على تثبيت سلاسل الـ DNA المزدوجة أثناء عمليه التضاعف

السؤال الثاني: في الجدول التالي ضع الحرف المناسب امام رقم العبارة مما يلي: -(25 درجة بالتساوي)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					25	24	23	22	21	20	19	18	17	16

1	في حالة الارتباط غير التام بين الجينات تكون نسبة التراكيب الابوية		
	A. 50٪	B. أكبر من 50٪	
	C. اقل من 50٪	D. 100٪	
2	يدخل في تركيب الـ RNA كل هذه المكونات فيما عدا		
	A. فوسفات	B. ادنين	
	C. جوانين	D. ثيامين	
3	الانزيم المسؤول عن إضافة زيل من عديد الادنين لجزيء الـmRNA هو		
	A. DNA Polymerase I	B. Reverse Transcriptase	
	C. Poly (A) Polymerase	D. Dam methylase	
4	انزيم التضاعف الرئيسي في الكائنات غير مميزة النواة هو		
	A. DNA Polymerase II	B. DNA Polymerase I	
	C. DNA Polymerase III	D. RNA Polymerase I	
5	من إحدى شفرات الانهاء لعملية الترجمة لخيط الـmRNA		
	A. AUG	B. AUC	
	C. UAA	D. AAA	
6	يقوم انزيم ..... بإضافة مجموعة ميثيل للأدنين الموجود في التتابع GATC		
	A. DNA Polymerase I	B. Reverse Transcriptase	
	C. Poly (A) Polymerase	D. Dam methylase	
7	الانزيم الذي يلعب دورا هاما في تخفيف التوتر الناتج عن الحلزنة الفائقة الموجبة هو		
	A. Topoisomerase I	B. Topoisomerase II	
	C. Primase	D. Helicase	
8	الانزيم الذي يلعب دورا في اصلاح الأخطاء التي تحدث اثناء التضاعف للـ DNA		
	A. DNA Polymerase III	B. DNA Polymerase I	
	C. DNA Polymerase II	D. RNA Polymerase I	
9	الانزيم المسؤول عن بناء شظايا اوكازاكي هو		
	A. DNA Polymerase III	B. DNA Polymerase I	
	C. DNA Polymerase II	D. RNA Polymerase I	
10	يقوم انزيم ..... ببناء بادي صغير من الـ RNA		
	A. Primase	B. Ligase	
	C. Helicase	D. Dam methylase	
11	يعتبر انزيم ..... هو الانزيم المسؤول عن ربط الحمض الاميني بالـ tRNA المناسب		
	A. Poly (A) Polymerase	B. Aminoacyl- tRNA synthetase	
	C. Gyrase	D. Peptidase	
12	الصفات الهولندرية هي الصفات التي توجد علي		
	A. كروموسوم X وتنتقل من الاب الي جميع أبنائه	B. كروموسوم Y وتنتقل من الاب الي أبنائه الذكور	
	C. كروموسوم Y وتنتقل من الاب الي جميع أبنائه	D. الكروموسومات الجسدية	
13	تتحور النسبة المندلية في حالة الجينات المكملة (التفوق المتنحي المزدوج) من 9:3:3:1 الي		
	A. 13:3	B. 15:1	
	C. 9:3:4	D. 9:7	

14	عند عمل تلقيح ذاتي للفئران الصفراء تنتج النسبة	
	a. 1:1	b. 3:1
	c. 2:1	d. جميع النسل اصفر
15	تنشأ الأنثى الخصوية في الانسان من طفرة في الجين	
	a. SRY	b. TFM
	c. TDF	d. a & c
16	التركيب الوراثي AAA+X في الدروسوفيلا يكون	
	a. اناث	b. ذكر
	c. بين جنسي	d. ذكر فائق

تم عمل تلقيح اختباري لإناث خليطة لثلاث جينات مرتبطة بالجنس في الدروسوفيلا وهي A, B, R وكان النسل الناتج كالتالي

A	B	R	350
a	b	r	340
a	B	R	130
A	b	r	110
A	B	r	32
a	b	R	28
A	b	R	6
a	B	r	4
	Total		1000

وبحل المسالة كانت النتائج كالتالي: - (قم باختيار الحرف الدال على الاجابة الصحيحة)

17	المسافة بين A-B هي	
	a. 25 وحدة خريطة	b. 27 وحدة خريطة
	c. 29 وحدة خريطة	d. 31 وحدة خريطة
18	المسافة بين B-R هي	
	a. 6 وحدة خريطة	b. 7 وحدة خريطة
	c. 8 وحدة خريطة	d. 9 وحدة خريطة
19	النسبية المئوية للعبور المزدوج المشاهد هي	
	a. 1%	b. 1.5 %
	c. 2 %	d. 3 %
20	النسبة المئوية للعبور المزدوج المتوقع هي	
	a. 1.5 %	b. 1.75 %
	c. 2 %	d. %3
21	معامل التوافق هو	
	a. 0.57	b. 0.9
	c. 0.8	d. 0.7
22	اثناء عملية التضاعف في الكائنات الـ prokaryotes الانزيم الذي يقوم بعملية الـ Decatenation هو:	
	a. Topoisomerase I	b. Topoisomerase II
	c. Ter-binding protein	d. DNA Polymerase I
23	خيط الـ m-RNA الرسول الاتي 5'-AAUCGUAC-3' هو ناتج نسخ الاتي:	
	a. 3'-TTAGCATG-5'	b. 5'-TTUGCUTG-3'
	c. 3'-AATGCTAC-5'	d. 3'-AAUGCUAC-5'
24	ناتج ترجمة الـ m-RNA التالي 5'-GCCACGUCCUAA-3' سلسلة من عديد الببتيد تحوي:	
	a. حمض اميني واحد	b. اثنين من الاحماض الامينية
	c. ثلاثة احماض امينية	d. أربعة احماض امينية
25	الانزيم الذي يقوم بمضاعفة DNA السلسلة المتأخرة Lagging strand في الكائنات مميزة النواة هو:	
	a. DNA polymerase- α (alpha)	b. DNA polymerase- β (beta)
	c. DNA polymerase- δ (delta)	d. DNA polymerase- ε (epsilon)

انتهت أسئلة الامتحان .... خالص تمنياتي بالنجاح والتوفيق أ.د/كرم أمين

Faculty of Science **Assiut University**

Dept. of Zoology

Exam of Animal Ecology Code No. 225Z

Credit hour system 2nd level. Year 2024

Time allowed: 2 hours

أجب عن الأسئلة الآتية: (لاحظ أن الأسئلة تقع في صفحتين) "درجة لكل نقطة"

س١ : اختـــر الإجابة الصحيحة من بين الأقواس ثم اطمس الدائرة المقابلة في ورقة الإجابة المعدة لذلك بالقلم الجاف:

1-Saprophytes include: **a**-(Bacteria) **b**-(Carnivores) **c**- (Omnivores) **d**-(all).
2-Liones are included under: **a**-(Omnivores) **b**-(Scavengers) **c**-(Predators) **d**-(all).
3-Migration of birds is affected by **a**-(photoperiod) **b**- (Humidity) **c**- (Temperature) **d**–(all).
4-Stenotherms are **a**-(widely distributed) **b**-(restricted in their distribution) **c**- (moderate in distribution) **d**-(all).
5- The temperature affects **a**-(the development of animals) **b**-(sex ratio) **c**- (metabolism) **d**–(all).
6-The minimum rate at which a population can increase under ideal conditions is known as **a**-(biotic potenial) **b**- (biotic potential) **c**- (biotic potentil) **d**-(all mentioned before are false).
7-A large number of young is characteristic of **a**-(short lived animals) **b**– (long lived animals) **c**-(animals that reproduce sexually) **d**– (all).
8- Fungi are included under **a**-(decomposers) **b**-(dcomposers) **c**- (decmposers) **d**-(decomposrs).
9- The **a**-(carrying capacity) **b**-(carying capacity) **c**–(carrying capcity) **d**-(carryieng capacity) represents the highest population that can be maintained for an indefinite period of time by a particular environment.
10- The community includes **a**-(one species) **b**- (individuals having the same morphology) **c**-(individuals that reproduce freely giving fertile offspring) **d**- (all mentioned before are false).
11- **a**-(The predators) **b**-(omnivores) **c**- (Saprophytes) **d**- (all) play a good rule in recycling of materials.
12- **a**-(fitness) **b**-(ftness) **c**- (fitnes) **d**-(community) is the ability of an organism to reproduce successfully.
13- The maintenance of conditions within the range that the organism can tolerate is known as: **a**-(Hmeostasis) **b**-(Homostasis) **c**-(Homeotasis) d- (all mentioned before are false)
14- **a**-(Parthenogenesis) **b**-(Parthenogensis) **c**- (Homeostasis) **d**-(Parthnogenesis) is a type of reproduction.
15- The least amount of energy in a community is present in **a**-(plants) **b**-(predators) **c**-(producers) **d**-(algae).
16- **a**-(Monogamy) **b**-(Polyandry) **c**-(Polyandy) **d**-(all) is the formation of a pair bond between one female and more than two males.
17- Consumers include **a**-(carnivores) **b**- (predators) **c**-(omnivores) **d**-(all).
18- **a**-(Biosphre) **b**- (Boisphere) **c**-(Biosphere) **d**-(Secondary consumers) includes water, soil and air.
19- **a**-(Transpiration) **b**-(Homeotherms) **c**-(Phytoplankton) **d**-(zooplankton) feed on 1ry producers.
20- **a**-(bats) **b**-(Scorpions) **c**-(some birds) **d**-(all) become active during day time.
21- **a**-(Homotherms) **b**-(Homeotherms) **c**-(Hometherms) **d**-(Homeothers) depend on internal heat production.
22- **a**-(Temperature) **b**- (pH) **c**-(light) **d**-(all) included under chemical factors. **اقلب الصفحة من فضلك**

23- **a**-(Light) **b**-(Temperature) **c**-(water) **d**-(all) is the physical factor which has a bifold effects on the animals.
24- **a**-(duration of light) **b**-(Temperature) **c**-(water) **d**-(all) is the physical factor which affects reproduction in goats.
25- **a**-(organic pollution) **b**-(Thermal pollution) **c**-(inorganic pollution) **d**- (all) is a kind of pollution arises from using irrigating technology in rivers.
26- **a**- (the density) **b**-(natality rate) **c**-(mortality rate) **d**-(all) is the number of individuals per unit of time.
27- **a**-(monogamy) **b**-(polyandry) **c**-(polygyny) **d**-(all) is the formation of a pair bond between one female and one male.
28-The number of births in a given time period is known as **a**-(natality rate) **b**-(natlity rate) **c**-(nataliy rate) **d**- (all).
29-A relationship in which one organism lives on the expense of another is known as **a**-(cannibalism) **b**-(parasitism) **c**-(mutualism) **d**-(all mentioned before are false).
30-The class of organisms found on the top of food pyramid are known as **a**-(consumers) **b**-(herbivorous) **c**- (producers) **d**-(all).

س٢: ضع علامة صح أمام العبارة الصحيحة (T=True) وعلامة خطأ (F=False) أمام العبارة الخاطئة ثم اطمس الدائرة المقابلة في ورقة الإجابة المعدة لذلك بالقلم الجاف:

31- The biosphere includes many complex communities ( )
32- The limiting factor determines the types of organisms which may exist in the environment ( )
33- Mutualism is the maintenance of conditions within the range that the organism can tolerate ( )
34- Thermal pollution may decrease diseases, and parasites in the ecosystem ( )
35-Etholgy is the science dealing with the interactions between organisms and their environment ( ).
36- The population includes all the species in a given area ( ).
37- The ecosystem includes all the members of the community plus the chemical environment in which they live in ( )
38- Cannibalism is a relationship in which one organism benefits and the other is not harmed ( )
39- Endothermy refers to animals which control their body temperature by external means ( )
40-Hetrothrms refers to species that sometimes regulate their body temperature and sometimes do not ( ).
41- Interspecific competition occurs among individuals of the same species for environmental resources ( )
42- Intraspecific competition occurs among individuals of different species for environmental resources ( )
43- The photoperiod is the factor which affects dear reproduction ( ).
44- Natural reserves is considered one of the positive impacts of man ( ).
45- Parasitism is a relationship in which one organism benefits and the other is not harmed ( ).
46- Biological control is considered as one of the negative impact of man ( )
47- Aggregation is a type of distribution ( ).
48- Algeria is situated within tropical biome ( ).
49- Secondary consumers, do not feed on primary consumers ( ).
50- Territory is a situation in which an animal share an exclusive area with rivals ( )

Good Luck

University: Asyut	**Invertebrate II**	**Total degree = 50**
Faculty: Science	**Code: 222 Z**	**Final exam.**
Department: Zoology	**June 2024**	**Time: 2 hrs.**

Answer the following questions: (Note: The questions are in 2 pages)

Q1. Give the scientific expression for the following: **(13 marks)**

1- A process of glycoprotein crosslinking to form rigid cuticle in Arthropoda.

2- A place in which *Sepia*'s fertilization occurs.

3- An ectoparasitic crustacean with four pairs of appendages and suctorial discs.

4- A phenomenon during which the visceral hump turns either dextral or sinistral.

5- Bivalve & bioluminescent crustacean can perform parthenogenesis.

6- Animals with upward oral surface and flexible arms.

7- Marine mollusks' larva with 2 ciliated lobes used for swimming and food capture.

8- Small myriapods having 3 branched antennae & 9 pairs of legs.

9- A process during which a substance is secreted around the foreign particle.

10- An exceptional state during which tardigrates shut off their metabolism.

11- Blind tubes extend into hemocoel and empty uric acid into hindgut.

12- A parasitic crustacean having external and internal part within crabs.

13- Adhesive ciliated knobs at the end of scaphopod's long tentacles.

Q2. Answer 8 only from the following questions: **(24 marks)**

1- Illustrate with drawings the digestion in both *Penaeus* & *Astropectin*.

2- Distinguish between scorpions & pseudoscorpions.

3- Demonstrate with drawings respiration in both *Lycosa* & *Eremina*.

Look behind please!

4- Trace the pathway of water current that drawn in & forced out *Anodonta.*

5- List the unique characters in Tardigrada.

6- Draw only with labeling the circulatory system in both *Scolopendra* & *Sepia.*

7- Discuss in detail the suitablization in Acarina life.

8- Classify phylum Mollusca, give an example for each.

9- Demonstrate the structure & functions of Water Vascular System.

10- Clarify the unique & similar characters for Onychophorans & their related groups.

Q3. Give the reason/(s): (13 marks)

1- *Holothuria* can protect itself from predation.

2- *Trochus* is protostomate.

3- Legs in *Cyclops* can move altogether like a paddle.

4- *Nautilus* can float.

5- Feather Stars' pinnules are important in feeding.

6- Mollusk's mantle is very important.

7- Although the absence of radula, *Unio* can grind its food.

8- *Conus* can engulf prey.

9- Aeolids are similar to coelenterates.

10- *Neptunus* can move efficiently and quickly.

11- *Lambis* has anterior gills.

12- Mantle is very important in *Eremina.*

13- *Limulus* belongs to Chelicerata.

Faculty of Science,
Zoology Department,
Zoology & Zoology an
Chemistry Section,

Final Exam
29 May 2023/2024

Course: Vertebrates (I)
Time: 2 hours
Level: Second
Course Code: Z232

Answer the following questions (**NOTE:** Exam in **TWO** pages)

Q1: Shade the correct answer: A, B, C, or D **(1 Mark each, 15 Degree)**

1- Scales in the sharks are:
A. Cycloid C. Placoid
B. Ctenoid D. Ganoid

2- One of the following is converted into thyroid gland of vertebrates:
A. Endostyle C. Epipharyngeal groove
B. Pharyngeal gill slits D. Peripharyngeal bands

3- The thermoreceptor in branchiostoma is:
A. Eye spots B. Infnudibular organ
E. Cephalic pigments C. Kollickers pit

4- Excretion in vertebrates takes place by:
A. Unpaired kidney
B. Unpaired pronephron
C. Paired mesonephric kidneys
D. Paired mesonephric and metanephric kidneys

5- The pineal organ in lampreys is:
A. Present immediately behind the nostril
E. Present immediately behind the eye
B. Present between the eye and the nostril
C. Absent

6- Each gill pouch in petromyzon communicates with the respiratory pharynx by:
A. Gill lamella C. External gill slits
B. Gill arches D. Internal gill slits

7- In petromyzon optic lobes are present in:
A. Forebrain C. Hindbrain
B. Midbrain D. Medulla oblongata

8- Intermediates between cephalochordates and vertebrates:
A. Ostracoderms B. Placoderms C. Branchiostoma D. Ammocoete larva

9- In deuterostomes, blastopore forms:
A. The mouth C. Brain
B. The anus D. Kidney

10- The teeth in fish are meant for:
A. Tasting B. cutting C. reproduction D. all

11- The petromyzon larva is called:
A. Tornaria C. Crinoid
B. Ammocoete D. Nauplius

12- Exoskeleton in lampreys is:
A. Bony C. Scaly
B. Cartilagenous D. Absent

13- In lampreys paired appendages are:
A. 2 pairs C. Absent
B. 3 pairs D. 3 pairs

14- Muscles of trunk and tail in petromyzon are arranged in:
A. D shaped myotomes C. F shaped myotomes
B. E shaped myotomes D. C shaped myotomes

15- In petromyzon water of pharynx is prevented from entering the buccal cavity by:
A. Velum C. Typhlosole
B. Endostyle D. Spiral valve

Q2: Shade (T) for True statements or (F) for false statements **(1 Mark each, 10 Degree)**

1- Wheel organ in Amphioxus help in feeding ( )

2- Kollicker's pit in Amphioxus is for feeding ( )

3- Hindbrain in bony fish controls swimming movements ( )

4- Air bladder is used for hydrostatsis, respiration, and sound production in fish ( )

5- Scales in fishes function as protection, age determination, and identification ( )

6- Masseter muscles in frog elevates mandible ( )

7- Tongue in frog helps in reproduction ( )

8- Intermediates between cephalochordates and vertebrates Ammocoete larva ( )

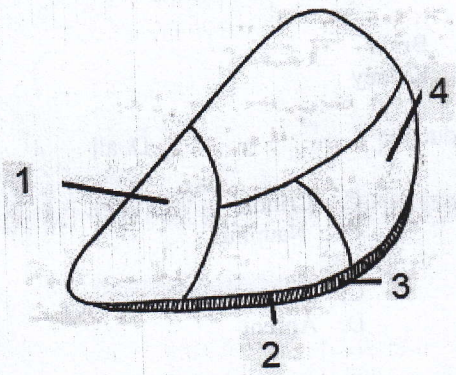
9- In Rohu gill rackers prevent the entry of food into gill chambers ( )

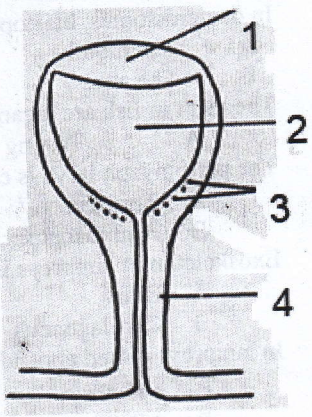
10- Salivary glands in frog are absent ( )

Q3: Answer FOUR the following questions **(10 degree)**

1. Explain the structure of placid scale by drawings?
2. Types of tails in fish?
3. Arterial system in bony fish?
4. Pentadactyle limb in vertebrates?
5. Compare between pisces (fish) and tetrapod?

Q4: Define the structure and label each item for the following questions **(10 degree)**





A-..... B-.....

Best wishes.....,

Answer the following questions (**NOTE:** Exam in **TWO** pages)

Q1: Put √ or X in front of following sentences and correct the wrong one:-(15 degree)

1- Melanophores are chromatophores containing yellow pigment.

2- Mormyrids have one column of electrocytes around caudal peduncle.

3- Light production in fishes usually takes place in choromatophores.

4- Iteroparity fishes spawn once during lifetime.

5- Viviparous fishes incubate eggs and liberate live young without providing any maternal source of nourishment.

6- Sounds made by gas bladder vibration in fishes have been described as hoot, bops, and yelps.

7- Anadromous migration in which fishes feed in the sea but enter the river to spawn.

8- Food supply is a determining factor for fish distribution.

9- The position of the mouth in trout as inferior.

10- Lachrymal region is situated below the front edge of the eye.

Q2: Fill in the following sentences (10 degree)

1- The start of migration depend on
   a-.....
   b-.....

2- The european eel undergoes very changes during its moving from feeding ground to its spawning ground as
   a-.....
   b-.....
   c-.....
   d-.....
   e-.....

1- The role of gonadotropin hormone in reproduction is
   a-.....
   b-.....

4- Nonplacental young fishes feed on yolk then supplemented by
   a-.....
   b-.....
   c-.....
   d-.....

5- Carnivorous fishes may be dividing into
   a-.....
   b-.....
   c-.....
   d-.....

Q3: Define Five only from the following: **(5 degree)**

Stenohaline fishes – Feeeding migration – Growth in fishes – Fecundity - Gonochoristic individual – Mimicry- Mass spawning – Sexual dimorphism.

Q4: Answer Five only of following themes: **(10 degree)**

1- Diagrammatically shows possible relationships among environmental factors, receptors, endocrine organs, and reproductive activity.

2- Diagrammatically shows the structure of the skin of fish.

3- Diagrammatically shows the types of gas bladders in fishes.

3- Diagrammatically compare by between blood circulation in lampery and shark.

4- Diagrammatically shows the early stages of development of chondrocranium.

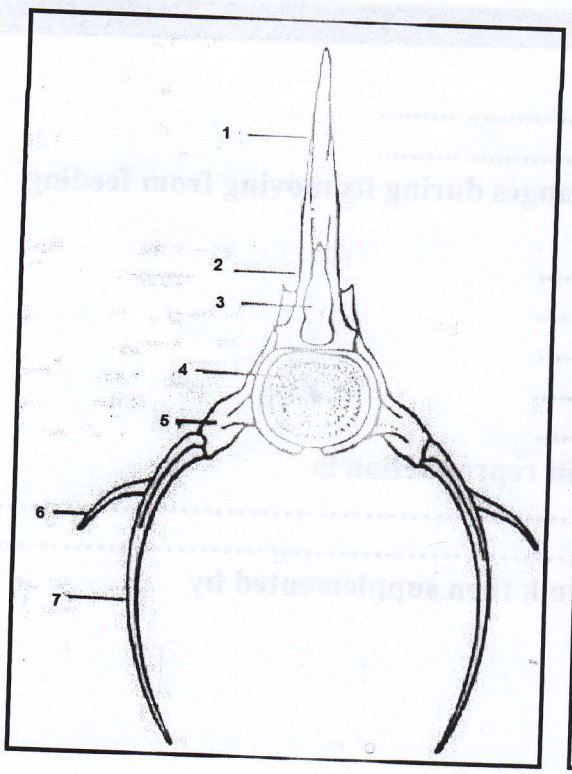
5- What are the advantages of indeterminate growth in fish?

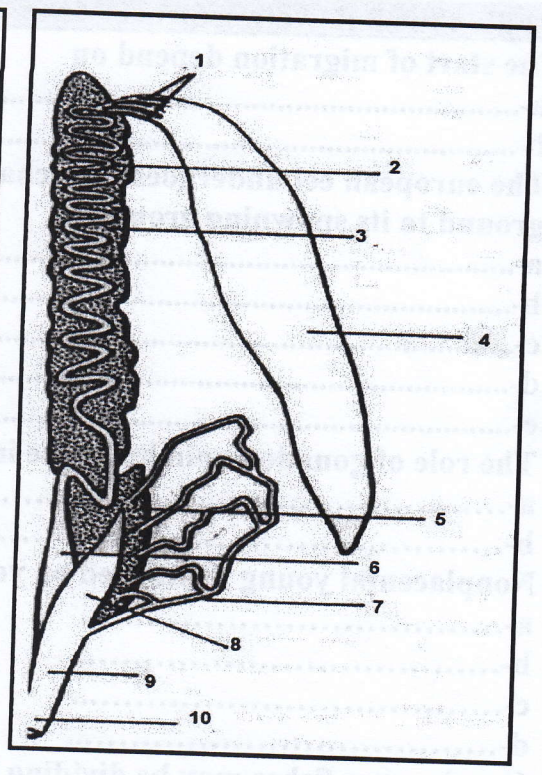
6- Discuss the endocrine secretion and osmoregulation in fishes.

Q5- Define and label each of the following items: **(10 degree)**

1-.....

2-.....





Best wishes.....,

Assiut University
Faculty of Science
Zoology & Entomology Department

Second semester General Entomology Exam
(31 – 5 – 2024)

Time: 2 hours
Level: Two
Course Code:240Z

Note: the questions on four pages and the answers in the same place

Answer the following questions (50 marks)

First Question: Choose the best correct answer: (15 marks)

1. **Generally, the last abdominal segment bears.....**
   a) Two pair of cerci b) A pair of antenna c) A pair of cerci d) A pair of spiracles
2. **Which of the following is the first layer of epicuticle from inner to outer?**
   a) Cement b) Wax c) Polyphenol d) Cuticulin
3. **On which suture the posterior tentorial pits found?**
   a) Epistomal b) Frontoclypial c) Occipital d) Postoccipital
4. **Which of the following is the lateral sclerite of each insect body segment?**
   a) Sternum b) Notum c) Pleuron d) Tergum
5. **The Long axis of head is horizontal and in line with the long axis of insect body. This orientation is called:**
   a) Prognathus b) Hypognathus c) Opisthognathus d) All of them
6- **The ootheca is produced by.....**
   a) Ovarioles b) Oogonia c) Accessory glands d) Spermatophore
7- **Which of the following is not lined by cuticle?**
   a) Foregut b) Midgut c) Hindgut d) Malpighian tubules
8- **Which of the following is responsible for absorption of waste products from hemolymph?**
   a) Foregut b) Midgut c) Hindgut d) Malpighian tubules
9- **A chemical substance that benefits the sender is called.....**
   a) Synomone b) Allemone c) Kairomone d) Antimone
10- **What is the most common sugar in the honey?**
   a- Sucrose b- Glucose c- Maltose d- Fructose
11- **The color of the honey depends on the type of.....**
   a) Pollen b) Nectar c) Honeybee worker d) Hive

12- The valve between mid and hind gut in insects is called.....

a- Rectum b- Peritrophic c- Pylorus d- Ileum

13- The protocerebrum innervates the.....

a) Antennae b) Compound eyes c) Mouthparts d) Labrum

14- Mosquito larvae get oxygen by.....

a) Cuticular respiration b) Siphon c) Bubbles d) Gills

15- What is the major component of insect hemolymph?

a) Water b) Oxygen c) Hemocytes d) Hemoglobin

Second Question: Put (True) or (False) in front of the following substances: (5 Marks)

1. The flow of hemolymph in dorsal vessel from front to back is controlled by ostia. ( )
2. The old empty exoskeleton is called ternal. ( )
3. All insects in apterygote undergo metamorphosis. ( )
4. In insects, the circulatory system is not important in gas transport. ( )
5. Insectsegments are grouped into three function units or tagmata. ( )
6. All cuticular structures are shed at ecdysis. ( )
7. Insects have cuticular processes which have the ability to move. ( )
8. Gastric caeca are a part of fore gut which increase the surface area. ( )
9. The absence of wings is a primary or a secondary condition. ( )
10. The occipital suture separates the occiput sclerite from gena. ( )

Third Question: Define the followingterminology. (5 Marks)

1. Pheromones.

   .....

   .....

2. Spermatophore.

   .....

   .....

3. Suboesophageal ganglia.

   .....

   .....

4. Drones.

.....

.....

5. Paedogenesis.

.....

.....

The Fourth Question: Write the functions of the following: (5 marks)

1. Thetentorium.

.....

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.....

2. Ecdysone hormone.

.....

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.....

3. Air sacs.

.....

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4. The male and female accessory glands.

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5. Wing venation.

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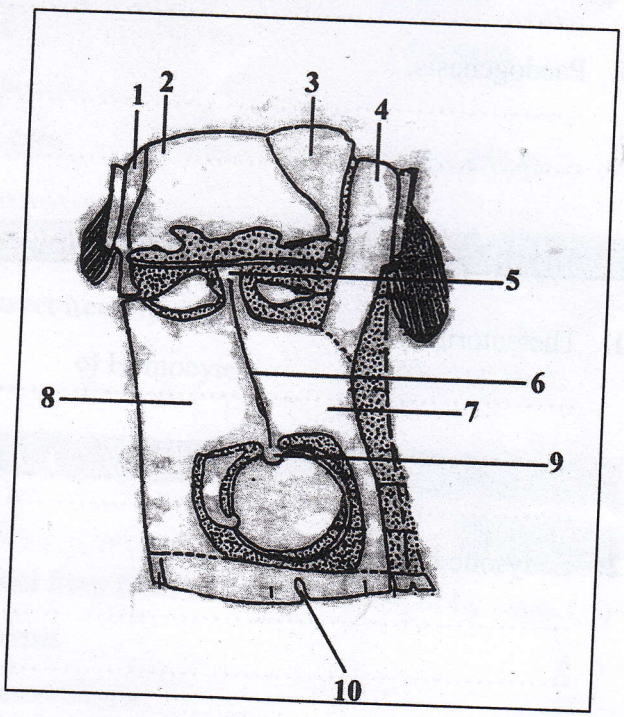
Fifth Question: Define and labeling the following diagram. **(10 marks)**



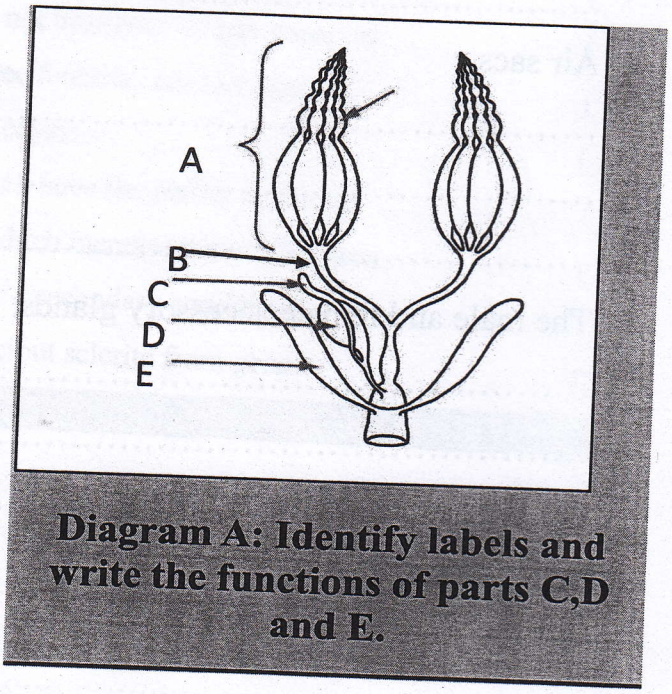


Diagram A: Identify labels and write the functions of parts C,D and E.

Sixth Question: Write Short notes about FOUR parts only of the following: (10 marks)

1- Segmentation of head.

2- Explain caste determination in honeybee.

3- The leg pretarsus

4- The wing venation.

5- The male external genitalia.

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Assiut University
Date: 26-5-2024
Time: 2 hours
3 pages

Faculty of Science
Zoology Department

Final Exam of Histology & Histopathology (212z)

For Second Year Students (Credit Hour)

I) Choose the most appropriate answer for each of the following statements: **(35 marks)**

1- .....produce antibodies and plays an important role in defense mechanism.

a) Mast cell b) Plasma cells c) Both a&b

2- The pigment cells are found in .....

a) Skin b) Hair c) Both a&b

3- Elastic fibers are appeared dark brown by .....stain.

a) H&E b) Milligan's c) Orcein

4- ..... cells are found close to blood capillaries, and may be considered as myoepithelial that may contract and constrict the blood capillaries.

a) Pericyte b) Fibrocyte c) Macrophage

5- Brown adipose tissue takes the brown color due to .....of this tissue.

a) Vascularity b) Softness c) Pigmentation

6- Irregular dense white C.T. can stretch in .....direction while regular dense white C. T stretched in .....direction.

a) Different / One b) One / Different c) No / One

7- In cartilage tissue, the .....cells are developed from embryonic mesenchymal cells.

a) Chondroblast b) Perichondrium c) Chondrocyte

8- The cartilage growth by .....

a) Mitosis b) Appositional c) Both a&b

9- The experimental scientist ..... coined the term "cell".

a) Antony b) Robert Hooke c) Theodor Schwann

10- Germinal epithelium is a modified epithelial tissue its function is .....

a) Division b) Contraction c) Differentiation

11- .....contains Nissl bodies and neurofibrils which extend in its finest branches.

a) Axon b) Dendrites c) Both a&b

12-The study of changes in tissues caused by disease is.....

a) Etiology b) Histopathology c) Pathogenesis

13-In which case the disturbance of cell metabolism is irreversible.....

a) Necrosis b) Hydrobic degeneration c) Cloudy swelling

14- What happened in deficiency of lipotropic factors?

a) Fatty infiltration b) Cloudy swelling c) Inflammation

15- It is the case in which the nucleus gradually dissolves away and disappear……

a) Pyknosis b) Karyorrhexis c) Karyolysis

16- …….. are basophilic bodies scattered in the cytoplasm of nerve cells.

a) Nissel granules b) Node of Ranvier c) Golgi apparatus

17- …… is not present in the adult nerve cells.

a) Pigments b) Centrosome c) Fibrils

18- Which one its basic function is communicates signals to target cells?

a) Muscle cell b) Neuron c) Both a&b

19- ……is a flask-shape having a single process which divides into a central and peripheral branch.

a) Bipolar nerve cell b) Multipolar nerve cell c) Pseudo-polar nerve cell

20- The cytoplasm of the muscle fibers is called ……

a) Axoplasm b) Sarcoplasm c) myelin cytoplasm

21- The muscle fibers owe their contractility to the presence of contractile bundle of protein filaments called……

a) Myofibrils b) Sarcofibrils c) Axofibriles

22- …… muscle is non-striated and involuntary.

a) Skeletal b) Cardiac c) Smooth

23- …… is a type of bone cell that breaks down bone tissue.

a) Osteoclast b) Osteocyte c) Osteoblast

24- Reticular connective tissue can be found in ……

a) Spleen b) kidney c) Ear

25- …….. are tough and resist stretch.

a) Elastic fibres b) Reticular fibres c) Collagenous fibres

26- Tropocollagen is synthesized by the……

a) Fibroblasts b) Collagen c) Both a&b

27- ……is caused by an irritant short duration of action.

a) Acute inflammation b) Chronic inflammation c) Subacute inflammation

28- According to the mode of secretion (changes in the secretory cells), glands are classified into:

a) Exocrine and endocrine b) Unicellular and multicellular c) Merocrine, apocrine and holocrine

29- Which cell is a connective tissue fixed macrophage?

a) Kupffer cells b) Langerhans cells c) Microglia

30- External auditory canal has special nature secretion which is……

a) Waxy secretion b) Fatty secretion c) Water secretion

31- Which of the following organ is mixed gland?

a) Pancreas b) Testis c) Both a&b

32- The pyriform nerve cells found in .....

a) Purkinje cells of cerebellum b) retina c) Spinal ganglia

33- What do you call the space where a chondrocyte sits (exists) in?

a) Space of Disse b) Vacuole c) Lacune

34- Which part of the alimentary canal is lined by stratified squamous epithelium?

a) Gall bladder b) Stomach c) Oesophagus

35- Which cells that their cytoplasm is full of melanin granules?

a) Pigment cells b) fibroblast c) leucocytes

II) <u>Mention whether each of the following statements is true (T) or False (F):</u> (15 marks)

36- Exocrine secretion goes into blood stream.

37- Histiocyte cells showed metachromatically stain when stained with Toluidine blue.

38- Multilocular adipose tissue composed of small fat cells which are filled with many droplets of fat.

39- Neuroepithelium is found in taste buds in the tongue.

40- Fibroblast is resting cell while fibrocyte is active cell.

41- The function of macrophage is heparin secretion.

42- Most of plasma cells die after four to five days and few survive to become memory cells.

43- Yellow elastic connective tissue found in arteries.

44- Pigment cells their cytoplasm is full of melanin granules.

45- The cartilage cells receive their oxygen and nutrients by diffusion.

46- The lubrication considered one of the functions of epithelial tissue.

47- The glandular epithelium can be classified according to the number of cells.

48- The reticular fibers formed mainly from collagen.

49- Cartilage is a model for the formation of bone and present in freely mobile joint.

50- The blood is considering fluid connective tissue.

أنتهت الأسئلة

مع تمنياتى لكم بالتوفيق: د/ شيماء محمود صالح

Assiut University
Faculty of Science
Department of Zoology & Entomology

Insect Morphology exam (242E)
Total degree: 50
Time: Two hours

June, 2024

Complete the following (10 degrees)

1- The parts of an insect leg are ……., ……., ……, ……., ……..

2- The mouth parts of butterflies consist of long slender tube that can roll or coil up, that called ……..

3- The thorax of insect is divided into ……., ……., …….

4- The leg of cockroach is modified for ……

5- The surface of the insect head is divided into regions by patterns of shallow grooves called ……

Give your essay in points about the following (30 degrees)

1- Steps of insect moulting.

2- First and second segmentations of the cuticle.

3- Direct flight of an insect.

4- The importance of the insect exoskeleton.

5- The function of the Tentorium.

6- What is complete metamorphosis?

7- Mention five sutures on the insect head.

8- What do you know about Apodemes?

9- What is the name of the sensory hair?

10- With draw mention the name of each layer of the cuticle.

11- Where could you find the Trochanter in an insect?

12- Which muscle is responsible for lifting the wing?

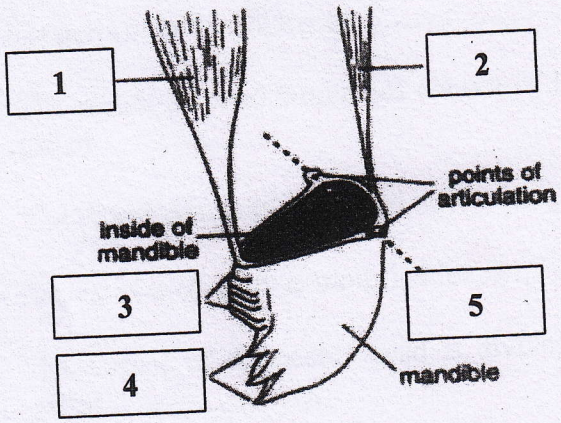
13- What is the name of the dorsal thoracic sclerite?

14- Type of articulation in insect.

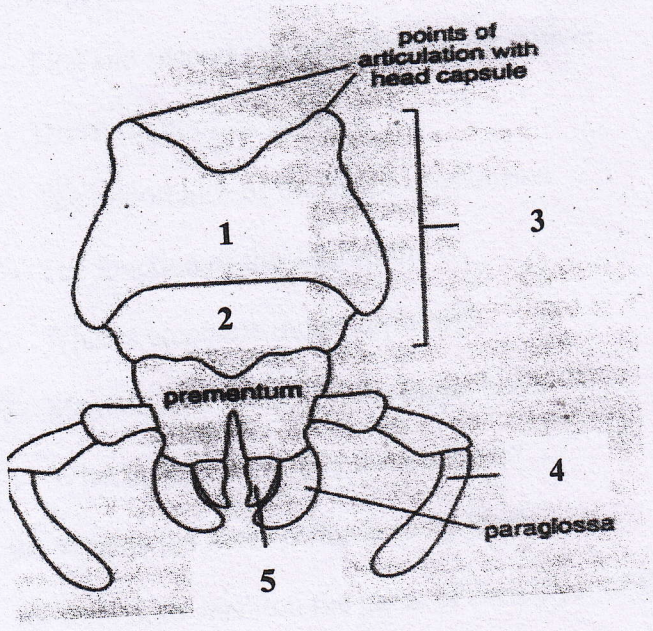
15- The name of the back foramen on the head.

Put the missing labels (10 degrees)

1- Muscle of the mandible



2- Labium



Professor Azza Awad wishing you a good luck

Faculty of Science,
Zoology Department,
Zoology & Zoology an
Chemistry Section,

Final Exam
28 May 2023/2024

Course: Fish Farming
Time: 2 hours
Level: Second
Course Code: Z295

Answer the following questions **(NOTE:** Exam in **TWO** pages)

Q1: Choose the best correct answer **(15 degree)**

1- There are _____ types of fish farming systems.			
A) 5	B) 4	C) 3	D) 2
2- Fish farming has exploited around _____ percentage of the world's wild fish stock.			
A) 50	B) 70	C) 25	D) 65
3-Which of these fish species are raised by fish farms?			
A) Salmon	B) Carp	C) Catfish	D) All
4-What sort of water is used for mariculture?			
A) Salt water	B) Chlorinated water	C) Pure water	D) All of above
5- Water Quality Data are			
A) PH	B) oxygen content	C) ammonia content	D) All
6- Management and rearing of fishes only is called as _____			
A) Aquaculture	B) Pisciculture	C) Apiculture	D) Fishery
7- The practice of catching the fish only available naturally is known is _____			
A) Monoculture	B) Capture fishery	C) Polyculture	D) Culture fishery
8- In a recirculating aquaculture system _____			
A) culture water is renewed	B) fish production is less	C) only tilapia can be farmed	D)culture water is reused
9- _____ is a waste product of protein digestion.			
A) Ammonia	B) Nitrogen gas	C) Nitrate	D) Nitrite
10- Which has antibacterial and antiseptic effect?			
A) UV-A	B) UV-B	C) UV-C	D) Vacuum-UV
11- Aquaculture refers to_____			
A) water –living form	B) Culture of shrimp	C) Cage culture	D) None of these
12- Dissolved oxygen content is less during_____			
A) Mid- day	B) Morning	C) Night	D) All
13-Level of management is more in _____			
A) Extensive system	B) Semi-intensive system	C) Intensive system	D) None
14- Aquaculture process comes under?			
A) Pond culture	B) Pen culture	C) Cage culture	D) All the above
15- Which farming technology is eco-friendly & scientific			
A) Extensive system	B) Semi-intensive system	C) Intensive system	D) None

Q3: Define each of the following: **(5 degree)**

Monoculture – Mariculture – Intensive aquaculture – Polyculture – Hydrological data

Q4: Answer six ONLY of following themes: **(30 degree)**

1- What are the objectives of aquaculture?

2- Mention the different kinds of aquaculture?

3- What are the merits of Cage Culture?

4- Mention considerations in site selection.

5- Ecological factors to be considered in site selection and explain one of them.

6- Economic and social factors to be considered in site selection.

7- Causes of mortality in fry transportation.

Best wishes.....,