University: Assiut | Selected topics | Total degree = 50

Faculty: Science | (Defense in animals) | Final Summer exam. 23

Department: Zoology | Code: 402 Z | Time: 3 hrs.

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

Q1. Choose between brackets: (16 marks)

1- Sea cucumbers secrete (melanin – ecdysin- holothurin) in attack.

2- (Soldier ants - lizards – Fish) have poison glands to defend the colony.

3- Boxer crabs use (sea anemones -worms- lizards) in danger.

4- (Chitons – Octopuses – sea stars) secrete ink to avoid predation.

5- Porcupine have (bristles – spines – quills).

6- (Horned lizard - Porcupine - both) cry/ies blood from eyes when threatened.

7- The bombardier beetles use (chemical -nutritional-associational) mechanism in attack.

8- (Nudibranchs – Sea stars - Rabbits) use their preys' secondary metabolites in defense.

9- Sea cucumbers & pearlfish have (associational – chemical- nutritional) mechanism.

10- (Pronking –Stay still - Mobbing) is characteristic for fawns against danger.

11- Walking sticks insects display (mimicry – mobbing- fleeing) against the predator.

12- (Fleeing - Mobbing - pronking) is the second line of defense in many animals.

13- The spiny lobster stop attacking sea slugs due to (chemical -autotomy-associational) mechanism.

14- (Chemical - Structural - Associational) defense is found in Surgeonfish.

15- Cnidocytes in Cnidaria help in (structural - chemical – both) defense.

16- (Chemical -Structural – Behavioral) defenses are secret weapons inside the animals.

Follow the rest of questions

Q2. Answer six only of the following: (24 marks)

1- Illustrate the autotomy strategy in three examples.

2- How can structural mechanisms serve the organism in defense, discuss in 6 examples.

3- List the main behavioral defense mechanisms against danger.

4- Demonstrate the tactics of organisms to avoid danger.

5- Explain in six examples the role of animal armor & thick skin to deflect the predators.

6- Discuss six various tactics displayed by the prey to startle the predator.

7- Compare between Batesian & Mullerian mimicry giving examples.

Q3: Give the reason (s): (10 marks)

1- The living organism performs various mechanisms in danger.

2- Sea cucumbers can attack any predators successfully.

3- Cuttlefish can resist the would-be predators.

4- Hermit crabs may plant anemones on their shells.

5- Scallops may be clapping.

6- The rabbit is running in zigzagging way in different directions.

7- The deer use stotting appearance.

8- Some shrimp spp. live in cavities of sponges safely.

9- Porcupine uses a timeless strategy in defense.

10- The wood frog can survive in severe climate.

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

بالتوفيق و السداد د. هناء عاطف جودة

a. Along beaches and behind undulations on the ocean floor
b. Above waterfalls
c. In point bars outside meander loops
d. In upstream from a tributary

10. Hydrothermal fluids invade and react with muddy sediments forming Layers of pyrite, sphalerite and galena parallel to the layering of host rock:
a. Epigenetic deposits
b. Stratabound deposits
c. Nonmetallic minerals
d. Residual mineral deposits

11. The naturally occurring material from which a mineral can be profitably extracted:
a. Ore
b. Mineral deposit
c. Porphyries
d. Gangues

12. Metallic minerals settle to form layers in the magma chamber:
a. Chromium
b. PGE
c. Hematite
d. (a& b)

13. Pegmatites are:
a. Crystallized from volatile rich fluids
b. Very coarse grained crystals (e.g., feldspar)
c. Enriched in Gem stones, rare earth elements (REE)
d. All of the above

14. Porphyry Cu, Mo deposits are:
a. Associated with mid-ocean ridge volcanism
b. Associated with plutonic, intermediate igneous rocks
c. Well known at Bushveld Complex, South Africa
d. Formed by metamorphic - dehydration reactions

15. Epithermal Au-Ag deposits are formed through:
a. Meteoric water dominated hydrothermal systems
b. Secondary enrichment
c. Partial melting
d. Fractional crystallization

16. Tin and tungsten deposits are commonly (as in Malaysia, Bolivia, Cornwall-England) associated with:
a. Ultrabasic rocks
b. Basic rocks
c. Felsic rocks
d. Intermediate rocks

17. The most common ore deposit associated with placer deposits is:
a. Pyrite
b. Chalcopyrite
c. Gold
d. Bauxite

18. The total amount of metal that can be extracted from any particular ore deposit Refers to.
a. Tonnage
b. Tenor
c. Grade
d. Average

19. A mineral deposit formed at the same time as the enclosing rock:

a. Syngeneic
b. Epigenetic
c. Gangue
d. Diagenetic

20. Gypsum, phosphate, halite are:

a. Metallic mineral deposits
b. Non-metallic mineral deposits
c. Industrial minerals
d. b &c

21. Hydrothermal deposits are typically form:

a. Veins
b. Replacements
c. Disseminations
d. All of them

22. Resource that can be extracted profitably at current market conditions and levels of technology is known as:

a. Grade
b. Reserve
c. Tenor
d. Tonnage

23. Sulfide-rich liquid found in the silicate magma is:

a. Homogeneous at lower temperature
b. Immiscible at higher temperature
c. Homogeneous at higher temperature
d. Rich in volatiles

24. Banded Iron Formations are restricted to the :

a. Phanerozoic
b. Precambrian
c. Recent
d. Mesozoic

25. Bauxites are the source of the world's:

a. lead
b. Cupper
c. Aluminum
d. Platinum

Assiut University
Faculty of science
Zoology and Entamology
Department

2023

Final exam (summer semester)
Course number: 324 Z
Protozology & Parasitology
Time: 2 hours

Answer the following question (Total 50 marks)

A- Select the single best answer for each of the following (1 mark/ each)

1. Metacercaria is an infective stage in the following parasites except

(a) *Fasciola gigantica* (b) *Heterophyes heterophyes*

(c) *Fasciola hepatica* (d) *Diphyllobothrium latum*

2. The digestive system is absent in

(a) *Taenia saginate* (b) *Enterobius vermicularis*

(c) *Schistosoma mansoni* (d) *Wuchereria bancrofti*

3. All the following protozoa live in the intestine except

(a) *Trichomonas hominis* (b) *Plasmodium* spp

(c) *Entamoeba coli* (d) *Balantidium coli*

4. Infective stage of *Ascaris lumbercoides* is

(a) filariform larvae (b) Embryonated egg

(c) Metacercaria (d) Cyst

5. The infective form of *Leishmania* is

(a) Promastigotes (b) Epimastigotes

(c) Metacyclic trypansoma (d) Crithidia form

6. The following are zoonotic diseases except

(a) Taeniasis (b) Heterphyiasis

(b) Leishmamiasis (d) Enterobiasis

7. The ootype in the female genital system of trematodes connects with

(a) Oviduct (b) Vitelline canal

(c) Uterus (d) all the above

8. The diagnostic stage of *Schistosoma haematobium* is

(a) Egg in the blood (b) Egg in feces

(c) Egg in urine (d) Cercariae in water

9. Cercariae of *Schistosoma* and *Fasciola* are different in the following except

(a) Tail (b) Penetrating glands

(c) a & b (d) Alimentary canal

10. All the following parasites lead to bloody diarrhea except

(a) *Schistosoma mansoni* (b) *Schistosoma haematobium*

(c) *Entamoeba histolytica* (d) *Trypanosoma* spp.

11. Two hosts are required to complete the life cycle of

(a) *Plasmodium falciparum* (b) *Enterobius vermicularis*

(c) *Giardia lamblia* (d) *Trichomonas vaginalis*

12. Contaminated green salad causes infection with

(a) *Acanthamoeba* sp (b) *Plasmodium* spp.

(c) *Ascaris lumbercoides* (d) *Wuchereria bancrofti*

13. In humans, malarial parasites multiply in liver cells by

(a) Binary fission (b) Budding

(c) Gametogony (d) Schizogony

14. The vector host of *Trypanosoma cruzi* is

(a) Winged bug (b) female of Anopheles sp

(c) *Culex* sp (d) Tse tse

15. The infective form of *Trichomonas hominis* is

(a) Trophozoite (b) Binucleated cyst

(c) Quadrinucleated cyst (d) none of the above

16. The diagnostic stage of *Balantidium coli* is

(a) trophozoite (b) quadrinucleated cyst

(c) cyst (d) metacercariae

17. Amoebic meningitis is a disease that can be caused by

(a) *Entamoeba histolytica* (b) *Naeglaria fowleria*

(c) *Entamoeba gingivalis* (d) *Entamoeba coli*

18. Sputum swab is used to diagnose

(a) *Asacaris lumbercoides* (b) *Enterobius vermicularis*

(c) *Wuchereria bancrofti* (d) *Schistosoma haematobium*

19. Consumption of uncooked fish is likely to cause which of the following helminthic disease

(a) *Diphyllobothrium latum* (b) *Taenia saginate*

(c) *Fasciola hepatic*a (d) *Echinococcus granulosus*

20. Which one of the following is a good general statement about the life cycle of cestodes?

(a) A snail intermediate host is required.

(b) The infective larval stage must be ingested: either via the predator/prey interaction or due to accidental ingestion of the intermediate host.

(c) There is always an aquatic larval stage, such as the coracidium.

(d) Cestodes always require 3 hosts to complete their life cycles.

21. Diagnostic stage of *Plasmodium* spp. in human blood is

(a) Ring stage
(b) Sporozoites
(c) Tachyzoites
(d) Oocyst

22. *Lymnaea trancatula* is the intermediate host of

(a) *Schistosoma haematobium*
(b) *Fasciola gigantica*
(c) *Schistosoma mansoni*
(d) none of the above

23. Definitive host is one

(a) In which sexual multiplication takes place and harbors adult form
(b) In which asexual multiplication takes place and harbors adult form
(c) In which sexual multiplication takes place and harbors larval form
(d) In which asexual multiplication takes place and harbors larval form

24. Nematodes are differentiated from other worms by the following except

(a) Absent fragmentation
(b) cylindrical body
(c) Flat or flashy leaf-like worm
(d) separate sexes

25. Which one of the following larval stages has no penetrating glands?

(a) Ookinete
(b) Miracidium
(c) Coracidium
(d) Filariform larva

26. Humans become infected with the adult tapeworm of *Taenia saginata* by

(a) Ingesting tapeworm eggs from cattle feces
(b) Intermediate host is mostly snail
(c) Hermaphrodite except for *Schistosoma* spp
(d) All of the above

27. The vector host of *Leishmania* sp. is

(a) Sand fly
(b) Winged bug
(c) tse tse fly
(d) female of *Anopheles* sp

28. Parasites that are to a given host, but in an abnormal situation are called

(a) Obligatory parasites
(b) Erratic parasites
(c) Incidental parasites
(d) Permanent parasites

29. *Biomphlaraia alexandina* is an intermediate host of

(a) *Schistosoma mansoni*
(b) *Schistosoma haematobium*
(c) *Fasciola hepatica*
(d) *Fasciola gigantica*

30. Parasites that are found in unusual hosts are called

(a) Facultative parasites
(b) Incidental parasites
(c) Obligatory parasites
(d) Erratic parasites

B- Mention which (True) or (False) of the following sentences

31. *Giardia lamblia* multiplies by longitudinal binary fission ( )
32. *Trichomonas vaginalis* has four anterior flagella and one posterior flagellum ( )
33. Metacercariae are encysted cercariae without tails ( )
34. *Balantidium coli* causes ulceration of the mucosa of the large intestine ( )
35. Redia stage is absent in *Schistosoma* sp ( )
36. Zoonoses, are diseases transmissible between animals ( )
37. *Plasmodium falciparum* is more dangerous to man than *P.vivax* ( )
38. Infective stage of *Trichomonas vaginalis* is a trophozoite ( )
39. Parasite is an organism that lives at the expense of another ( )
40. Chagas disease is caused by *Trypanosoma rhodesiense* ( )
41. The infective stage of *Enterobius vermiculris* is an embryonated egg ( )
42. *Plasmodium* sp. can be diagnosed through thin blood film ( )
43. All protozoans are motile ( )
44. *Schistosoma haematobium* inhibits the vesicular venous plexuses ( )
45. Diagnostic stage of *Fasciola gigantica* is eggs in feces ( )
46. *Naegleria fowleri* is a permanent parasite in man ( )
47. Oocyst is the zygote after the formation of the cyst wall ( )
48. Coracidium is the larval stage of *Diphyllobothrium latum* ( )
49. Eosinophilia is a blood diagnosis of the parasitic diseases ( )
50. Mutualism is an association between two organisms that is necessary for both and from which both benefit ( )

Good luck**.....** ***Prof. Dr., Gamal H. Abed***
Dr. Sara S. Abdel-Hakeem

Assiut University Faculty of Science Geology Department		جامعة أسيوط كلية العلوم قسم الجيولوجيا

Summer Semester Final Examination
Geology Students
(Invertebrate Paleontology)

September 2023	G215	50 Degree	Time: 2 hours

Answer the following questions.

First question

1. Write briefly on the following statements (15 degree)

A. Classification of marine biota.

B. Different modes of fossil preservation.

C. The importance of marine microfossils.

2. Write the geologic term in the front of the following definition (5 degree)

1. The totality of fossils and their placement in rock formations and sedimentary layers
2. Depth in the oceans below which the rate of supply of calcium carbonate lags behind the rate of solvation.
3. The individual calcareous plate in calcareous nannoplankton
4. Marine microorganism considered as a major source of atmospheric oxygen
5. A central pillar like axis extending from apex to the base of the gastropod shell.

3. Write the geologic ages in the front of the following index fossils (5 degree)

1. Ceratitic cephalopods
2. Fusulina foraminifera
3. Centrales diatom
4. Ammonitic cephalopods
5. Pennate diatom

4. Write on the following (25 degree).

1- Effect of salinity on foraminiferal test.
2- Articulata and Inarticulata brachiopods.
3- Dental plate in Bivalvia.
4- Ecology and applications of Diatom.
5- Advantages and disadvantages of coccoliths

Good Luck

Dr. Amr Abdel Sabour

Dept. of Zoology

Faculty of Science

Assiut University

Invertebrate1 (220Z)

(Total mark 50)

Summer term2023

Q1 Choose the correct answer (20 marks) one mark for each point

1). The digestive system (gut) of Cnidaria is made of:

a) mesoglea b) epidermis c) mesoderm d) gastrodermis

2- What type of body cavity do 1) rotifera and 2) platyhelmintheshave ?

a) 1) pseudocoelomate 2) acoelomate b) both acoelomate

c) 1) acoelomate 2) pseudocoelomate d) both pseudocoelomate

3-). What class of flatworm includes flukes ?

a) Trematoda b) Planaria c) Nematoda d) Cestoda

4-). Hookworms are in the genus __1__ and feed on __2__in the intestine.

a) Enterobius ; digested food b) Necator ; blood

c) Necator ; digested food d) Enterobius ; blood

5-Four examples of parasitic nematodes are hookworms, filarial worms, _____ ,and _____

a)tapeworms, pinworm b) pinworms, trichina worms

c) trichina worms, ribbon worms d) ribbon worms, tapeworms

6- Which organelle functions to remove excess water?

a) Micronucleus b) contractile vacuole c) pellicle d) gullet

7- Which of the following is autotrophic?

a) Paramecium b) foraminifera c) ameba d) euglena

8-.Protists are extremely diverse and thus pose a challenge to their classification. Three of the four statementsare 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.

9- How many pairs of aortic arches do Annelids have?

a)1 b) 3 c)5 d) 7

10- The parts of the annelid digestion system in the correct order are…

A. Mouth, pharynx, intestine, crop, gizzard, anus
B. Mouth, crop, gizzard, pharynx, intestine, anus
C. Mouth, pharynx, crop, gizzard, intestine, anus
D. Mouth, crop, gizzard, stomach, anus

11- The clitellum is used for all of the following except…

A. acts as a cocoon where the fertilized egg develops
B. Houses the testes and the ovaries
C. secretes a mucus that holds worms in place

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 cells c)-Epitheliomuscular cells d)-Nutritivemuscular cell

15- type of symmetry do sponges have?

a-Radial b- Bilateral c-Biradial d. Asymmetrical

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-The nematode Ascaris lumbricoides infects humans, spending most of its adult life inside the intestines of its host. To be infected, a person must

a. consume the nematode's eggs. b. walk barefoot on infested soil.

c. sit on an infested toilet seat. d. All of the above

20. Which of the following is a feeding habit in which an organism strains its food from the water around them?

a- parasite b) filter feeder c) detritus feeder d) omnivore e) sporozoan

Q2- Mention the scientific terms of the followings (10 marks) one mark for each point

1- -Phylum linked between parazoa and metazoa

2- The term that refers to trematode which depends on two or more hosts to complete its life cycle

3- The class of Cnidaria which have a strobila structure in the life cycle of members class

4- An extension of body wall of Polycheata used in swimming , gas exchange and burrowing.

5-Class of Cnidarians have notoriusly deadly neurotoxins.

6- Structures are found in many anemones, the edges of the septa are extended into thread like structures that contain nematocysts and gland cell

7-A term that refers to Cnidaria and the Cnetophora

8-The infective stage of *Fasciola* sp

9-The the ecto parasitic class of Platyhelminthes

10- Worm usually found in people in tropical countries and live in lymphatic system

Q3-With labblling drawing illustrate four only (8 mark2 for each)

1-Body plane of Monogenea 2-Structure of excreation unit of Annilida

3- Body plan of placozoa 4- Structure of Plasmodium trofozoite

5-Polyp form and medosa form

Q4- Answer the three only following questions (12 mark4 for each)

1- Demonstrate Rotifera life cycle -

2- Compare between classes of phylum Annilida

3-How trematods adapted for parasitism

4- Compare between protostomiun and deutrostomium

Good luck

أ.د/ أزهار حسين محمد

Assiut University

Faculty of Science

Zoology and Entomology Department

Course: Genetic Engineering

Course code: (314Z)

Time: Three hours

Summer semester Final **exam (May, 2023)**

Answer the following questions

I: Answer 5 only of the following (15 marks)

1- Structure and how TALENs generate knockout cells
2- Types of Lambda phage vectors
3- Production of knockout mice (Example knock out of the fur coloration gene in mice)
4- Explain with drawing the main steps of RNA interference
5- Methods of introducing DNA clones into the target cells
6- Limitations of using site specific nucleases in gene knockout

II: Define the following terms (10 marks)

1- Gene knock in
2- DSB in knockout
3- miRNA and siRNA
4- ORI and MCS in plasmid DNA
5- Operon (give example)
6- Mirror like and inverted repeat sequences
7- Homologous recombination
8- Mechanisms of DNA repair in site specific nucleases
9- List 3 applications of TALENs
10- Chimeric organism

III- Choose the correct answer (10 marks)

1- RNA editing is any process, other than..... that results in a change in the sequence of RNA transcript. **a- Polyadenylation b- capping c- splicing d- translation**

2- Production of Human Apolioprotein (ApoB100) and (ApoB40) in liver and intestine, respectively is an example of..... **a- C to U RNA editing b- U to C RNA editing c- A to I RNA editing d- I to A RNA editing**

3- Inosine largely behaves like ..... in RNA folding and by the translation machinery.
a- adenine b- guanosine c- thymine d- cytosine

4- A-to-I RNA editing sites are abundantly occur in....
a- Intronic regions and 3′-UTRs of mRNA b- Intronic regions only c- exonic regions and 3′-UTRs of mRNA d- exonic regions only

5- ADARs are Adenosine deaminases that acting on .....catalyzing A to I transition
a- dsDNA b- dsRNA c- ssDNA d- ssRNA

6- When homologous recombination occurs, the negative selection marker should.....
a- insert into the genome b- cut the genome c- inhibit the genome d- not insert into the genome

7- The herpes simplex virus thymidine kinase gene (HSVtk), is used as.....in homologous recombination. **a- Negative selection marker b- positive selection marker c- restriction enzyme site d- none of the mentioned**

8- CRISPR-Cas system class 1 type I is called.....
a- CRISPR Cas 9 b- CRISPR Cas3 c- CRISPR Cas 10 d- CRISPR Cas7

9- CRISPR-Cas system class 1 type III is called.....
a- CRISPR Cas 9 b- CRISPR Cas3 c- CRISPR Cas 10 d- CRISPR Cas7

10- In modified crispr cas9 system used in gene editing, crRNA and tracrRNA can be combined into .....
a- sgRNA b- single tracrRNA c- single crRNA d- none of the mentioned

VI- Answer the following questions (15 marks)

1- **Discuss the Steps in gene knockout model.**
2- **What are the types of RNA editing? explain one type with details.**
3- **Importance of the PAM Sequence in CRISPR Experiments.**

End of questions.....

Good luck

Assiut University
Faculty of Science
Zoology Department

Summer Semester Exam
General Zoology

Time: 2 hour
Course Code: 100Z
August, 2023

Answer the following questions (50 marks)

Question 1: Choose the correct answer of the following (25 marks):

1. ..... secrets calcitonin hormone which stimulates calcium uptake by bones.
a) Thyroid gland **b)** adrenal gland **c)** Pancreas.

2. ..... are cube-like cells with large, spherical central nuclei.
a) columnar epithelium. **b)** squamous epithelium. **c)** Cubodial epithelium

3. Which one of the following is NOT considered a connective tissue?
a) Cartilage **b)** Bone **c)** Muscle

4. ..... transmit sensory information (impulses) to the CNS.
a) Sensory neurons **b)** Motor neurons. **c)** efferent neurons.

5. All types of connective tissue originate from.....
a) Mesoderm **b)** Endoderm **c)** Ectoderm

6. The axons of several neurons collect together to form.....
a) nodes of Ranvier **b)** nerves. **c)** Schwan's cell.

7. The increase of growth hormone secretion in adults lead to.....
a) Acromegaly disorder **b)** Gigantism **c)** Dwarfism

8. The yolk concentrated at vegetal pole in the .....egg.
a) Isolecithal **b)** Telolecithal **c)** Centrolecithal

9. .....support and protect neurons as they do not participate in signal transmission.
a) Neurons **b)** Neuroglia **c)** Axons

10. The .....hormone stimulates milk production.
a) Prolactin **b)** FSH **c)** LH

11. Blood cells belong to.....
a) Skeletal connective tissue.
b) Epithelial tissue
c) Vascular connective tissue.

12. The epithelial tissue which present in the wall of blood vessels……..

a) Simple cubodial epithelium.

b) stratified squamous epithelium

c) Simple squamous epithelium.

13. Bone and cartilage are ……..

a) Skeletal connective tissue

b) Vascular connective tissue

b) Connective Tissue Proper.

14. All of the fallowing are membranous organelles except…… .

a) Mitochondria b) Ribosomes c) Golgi complex

15. The cell organelles which concerned with synthesis of lipids and phospholipids? ……

a) Golgi apparatus **b)** Mitochondria **c)** Smooth endoplasmic reticulum

16. Homogenous rounded vesicles, surrounded by single membrane --------

a) Nucleus b) Centrioles c) Lysosomes

17. The movement of molecules from high to low concentration through the lipid bilayer called-----

a) Facilitated passive diffusion b) Simple passive diffusion c) Active transport

18. The entrance of liquid material into the cell across the cell membrane called-----

A) Phagocytosis b) Endocytosis c) Pinocytosis

19. What type of body cavity the nematodes have?

a) Coelom b) Pseudocoelom c) Acoelom

20. These organisms have a chitinous exoskeleton and jointed appendages.

a) Echinoderms **b)** Annelids **c)** Arthropods

21. A phylum characterized by the presence of flame cells ……

a) Nematoda b) Platyhelminthes c) Cnidaria

22. A branch of zoology concerned with description, identification, nomenclature and classification of animals is called--------

a) Taxonomy b) Histology c) Cytology

23.Polyp and medusa are forms of.....

a) Poriferans b) Cnidarians c) Protozoans

24. Are diploblastic animals----------

a) Annelida b) Platyhelminthes c) Cnidaria

25. In which phylum the digestive system is complete------

a) Nematoda b) Platyhelminthes c) Cnidaria

Question 2: Answer the following by "True" or "False" (25 marks)

1. Oogenesis referred to the process of male gametes formation. ( )
2. Muscular tissue is the body tissue which covers exposed surfaces, lines body cavities and forms glands. ( )
3. Connective tissue is avascular tissue (has no blood vessels). ( )
4. Exocrine glands releases their secretory product into the extracellular space from which it enters the bloodstream ( )
5. The term stratified refers to the fact that an epithelial tissue has only one layer of cells. ( )
6. Gastrulation rearranges the blastula to form two-layered embryo. ( )
7. Goblet cell is considered as unicellular gland. ( )
8. Pseudocoelum the body cavity that is completely surrounded by tissue derived from the mesoderm. ( )
9. Connective tissue fills internal space, structural support, storage of energy. ( )
10. Adrenocorticotropic hormone stimulates the thyroid gland to produce steroid hormones. ( )
11. GH secreted from the anterior lobe of pituitary gland. ( )
12. Mitochondria membranous organelles are the sites of energy production in cells ( )
13. Taxonomy is a science of biology deals with the formation, structure and function of cells ( )
14. Centrioles organelles modify, sort and package proteins in the cell ( )
15. Golgi apparatus responsible for cell division ( )
16. The nucleus is enclosed in membrane known as nuclear envelope ( )

17. Glycoproteins (Proteins + carbohydrate) that are embedded in or that lie on the bilayer ( )

18. Both glycolipids and glycoproteins are called glycocalyx ( )

19. Phylum Annelida is characterized by radial symmetry ( )

20.Plasmobium moves using pseudopodia ( )

21.Aristotle define the "species" ( )

22.Ray established the Binomial nomenclature ( )

23.The notochord is a supporting structure found at all chordates ( )

24.Phylum Arthropoda their body divided into cephalothorax and abdomen ( )

25. Phylum Annelida have respiratory gas exchange ( )

Dr. Asmaa Ramadan & Dr. Fatma Anwar
With my best wishes

University: Asyut	**Invertebrate II**	**Total degree = 50**
Faculty: Science	**Code: 222 Z**	**Final exam.**
Department: Zoology	**Summer 2023**	**Time: 2 hrs.**

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

Q1. Choose between brackets: (16 marks)

1- (*Pagurus* – Aeolids- *Dentalium*) like/s cnidaria.

2- *Peripatus* is similar to (*Iulus* - *linkia* - *Anodonta*).

3- *Limulus* belongs to (Crustacea – Prosobranchia- Chelicerata).

4- Spinnerets are found in (*Cleopatra* - *Tricometra* - *Lycosa*).

5- (Chitons – Octopuses – sea stars) move by jet propulsion.

6- Visceral mass is asymmetry in (*Anodonta* - *Trocus* - both).

7- (Glochidium - Spat – Auricularia) larva has a byssal thread & bivalve shell.

8- The jaw apparatus in *Tripneustes* is (crystalline style –Aristotle's lantern-radula).

9- (*Acanthaster* -*Cyclops* - *Aplysa*) possesses mantle.

10- Water vascular system is found in (*Laganum* - *Anodonta* - *Sacculina*).

11- (Radula - Endoskeleton - Capitulum) is characteristic for *Sarcoptes*.

12- Copula in *Cyclops* helps in (movement - excretion - respiration).

13- (Cryobiosis – Molting -Tagmatization) is shedding of exoskeleton at intervals.

14- *Holothuria* has (exoskeleton - endoskeleton - mantle).

15- (Mites - Pauropods – Sea urchins) have 3 branched antennae & 9 pairs of legs.

16- The nervous system in *Buthus* has (12 – 21- 8) free ganglia.

Follow the rest of questions

Q2. Answer six only of the following: (24 marks)

1- Trace blood circulation only with drawings in both *Eremina* & *Sepia*.

2- Demonstrate structure & function of exoskeleton in Arthropoda.

3- Compare only with drawings the nervous system in both *Anodonta* & *Scolopendra*.

4- Classify phylum Mollusca & give an example for each.

5- List the diagnostic characters of Echinodermata.

6- Distinguish feeding & digestion in both *Tripneustes* & *Penaeus*.

7- How can land Chelicerata adapt to its habitat?

8- Demonstrate with drawings structure & functions of water vascular system in Echinodermata.

Q3: Correct over the line: (10 marks)

1- Book lungs are the excretory system in *Eremina*.

2- Siphuncle in *Nautilus* is important in reproduction.

3- *Anodonta* is a good hunter.

4- Absence of epicuticle from joints.

5- Horseshoe crabs belong to Crustacea.

6- The jaw apparatus in *Chiton* is Aristotle's lantern.

7- *Scallop* is glowing fluorescent under UV light.

8- Sea stars can produce pearls.

9- *Iulus* protects themselves by secreting ink.

10- Hermit crabs are marine chelicerates with long legs, proboscis & small body size.

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

بالتوفيق و السداد د. هناء عاطف جودة