



Final Exam of invertbrates (I)

2023-2024



Assiut University

Faculty of Science

Department of Zoology

Time: 2 Hours

Corse Code: 220 Z

Total degree:50

Answer the following questions:

Note: Questions are in 4 pages

Q I: Choose the correct answer:(30 marks one for each point).

1. *Fasciola gigantica* lives in:

- A. bile ducts of herbivorous animals
- C. Intestine of sheep

- B. Blood of sheep
- D. Spleen of sheep

2. Nemerteans are also known as

- A. Tap worm
- C. Ribbon worms

- B. Liver flukes
- D. Blood flukes

3. Primitive nervous system is found in?

- A. Protozoa
- C. Annelida

- B. Cnidaria
- D. Echinodermata

4. Which one of the following statements is correct in the body of sponges ?

- A. Consists of epithelial tissues only
- B. All the four types of tissues are seen in the body
- C. Structurally organized tissues are absent
- D. Epithelial and connective tissues are present

5. Which of the following is a free-living flat worm?

A. *Planaria*

B. *Taenia*

C. *Fasciola*

D. *Pheretima*

6. Amphiblastula and parenchymula larval stages are found in the

- A. Cnidaria
- C. Porifera

- B. Platyhelminthes
- D. None of these

7. Which protozoan is responsible for causing malaria in humans?

- A. Amoeba
- C. Plasmodium

- B. Giardia
- D. Trypanosoma

8. Which one of the following is not a hermaphrodite animal?

A. Earthworm

B. Flatworms

C. Leeches

D. Polychaetes

9. *Schistosoma* is a parasite found in:

- A. Blood B. Liver C. Lungs D. Intestine

10. Regeneration occurs in

- A. Hydra B. Earthworm C. Planaria D. All of them

11. Skeleton made of spongin fibers occurs in:

- A. Calcareous B. Demospongiae C. Hexactinellida D. Both a & b

12. Which of the following is a member of phylum porifera?

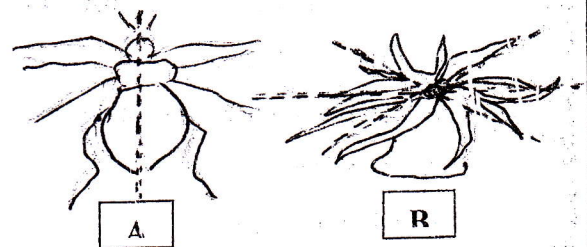
- A. Sycon B. Leucosolenia C. Spongilla D. All of them

13. Which of the following cells are useful for feeding in sponges?

- A. Collar cells B. Pinacocytes C. Porocytes D. Sclerocytes

14. The type of symmetry is "A" and "B" is:

- A. Radial and bilateral respectively
B. Both are radial
C. Bilateral and radial respectively
D. Both are bilateral



15. The second word of the scientific name refers to:

- A. Family B. Genus C. Species D. Kingdom

16. Excretory system of *Planaria* is characterized by:

- A. Pinocytes B. Choanocytes C. Nematocytes D. Flame cells

17. Which of the following statement is correct in Annelids?

- A. Have special organs of excretion called nephridia.
B. Nervous system with a double ventral nerve cord.
C. Sensory system of tactile organs, taste buds, statocysts.
D. All of them

18. Excretory system of *Allolobophora* is characterized by:

- A. Pinocytes B. Nephridia C. Choanocytes D. Nematocytes

19. Primitive nervous system is found in

- A. Porifera B. Echinodermata C. Cnidaria D. Annelida

20. The egg is oval with lateral spine in

- A. *Schistosoma heamatobium* B. *Schistosoma mansoni*
C. *Fasciola hepatica* D. *Fasciola gigantica*

21. The members of following phylum are exclusively marine, radially symmetrical and diploblastic

- A. Echinodermata B. Cnidaria C. Porifera D. Annelida

- a-.....
b-.....
c-.....
d-.....

3- Define five only from the following: (5 degree)

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

4- Answer five only of following themes: (10 degree)

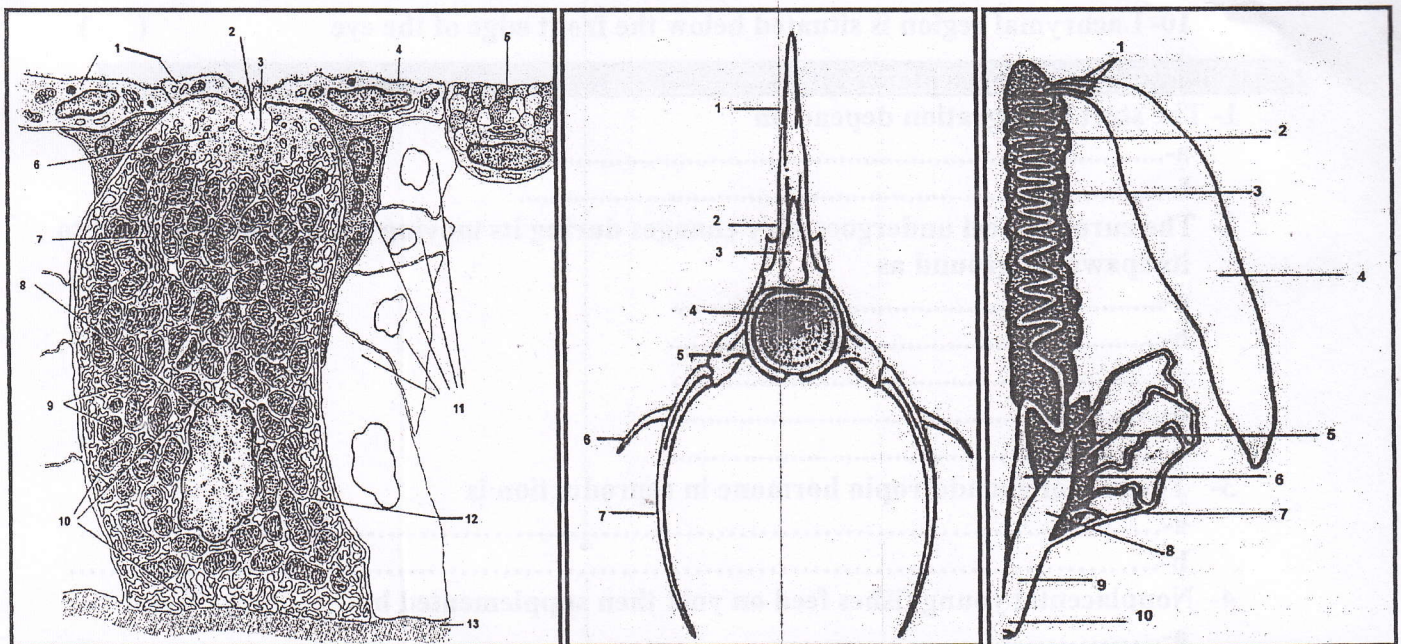
- 1- Diagrammatically shows possible relationships among environmental factors, receptors, endocrine organs, and reproductive activity.
- 2- Diagrammatically shows the structure of the skin of fish.
- 3- Diagrammatically shows the types of gas bladders in fishes.
- 5- Diagrammatically compare by between blood circulation in lampery and shark.
- 6- Diagrammatically shows the early stages of development of chondrocranium.
- 7- What are the advantages of indeterminate growth in fish?
- 8- Discuss the endocrine secretion and osmoregulation in fishes.

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

1-.....

2-.....

3-.....



With my best wishes.....,

-
- This image shows a full page of a handwriting practice worksheet. It consists of approximately 20 horizontal rows. Each row is defined by two parallel dotted lines, creating a series of uniform gaps for letter height. The lines are evenly spaced and extend across the entire width of the page. There is no text or other markings on the paper.

22. Schizont stage of life cycle of malarial parasite occurs in:

- A. RBC of man
- B. Stomach of mosquito
- C. Blood of mosquito
- D. None of these

23. Sponges are considered as

- A. filter feeding
- B. Sessile
- C. both A&B
- D. Endoparasites

24. Which of the following is not characteristic of the animal kingdom?

- A. Exclusive reliance on sexual reproduction.
- B. Motility at some stage of life cycle.
- C. Multicellularity; cells form tissues and organs.
- D. Embryonic development during the life cycle.

25. Feeding in sponges takes place through

- A. Osculum
- B. Choanocytes
- C. Nurse cells
- D. ostia

26. *Hydra* sp. is characterized by:

- A. Sexual reproduction via gametes
- B. Nematoblasts
- C. Mouth surrounded by 6-10 tentacles
- D. All

27. Monocystis belongs to the order of

- A. Gregarinida
- B. Coccidia
- C. Microsporidia
- D. Sarcosporidia

28. Ascaris is considered as:

- A. Acoelomate
- B. Pseudocoelomate
- C. Coelomate
- D. All

29. Flatworms, such as tapeworms, belong to which phylum?

- A. Platyhelminthes
- B. Mollusca
- C. Annelida
- D. Nematoda

30. Which is not the characteristic of phylum protozoa

- A. Pseudopodia
- B. Binary fission
- C. Contractile vacuole
- D. Parapodia



Faculty of Science

Assiut University

Dept. of Zoology

Exam of Animal Ecology Code No. 225Z

Credit hour system 2nd level. Year 2023-2024

أجب عن الأسئلة الآتية:

س ١: اختر الإجابة الصحيحة من بين الأقواس ثم اطمس الدائرة المقابلة في ورقة الإجابة المعدة لذلك بالقلم الجاف:

- 1-Saprophytes include a-(Fungi) b-(Bacteria) c-(mushrooms) d-(all).
- 2-Carnivores include a-(Predators) b-(Scavengers) c-Cannibalism d-(all).
- 3-Light affects a-(the color of animals) b-(morphology) c-(behavior) d-(all).
- 4-Eutherms are a-(widely distributed) b-(restricted in their distribution) c-(moderate in distribution) d-(all).
- 5- The temperature affects a-(the physiology of animals) b-(life cycles of animals) c-(development of the organism) d-(all).
- 6-The maximum rate at which a population can increase under ideal conditions is known as a-(biotic potential) b-(biotic potential) c-(biotic potential) d-(biotic potential).
- 7-A few numbers of young is characteristic of a-(short lived animals) b-(long lived animals) c-(animals that reproduce once in their life) d-(all).
- 8- The organisms that break down wastes and dead organisms are known as a-(decomposers) b-(producers) c-(consumers) d-(all).
- 9- The a-(carrying capacity) b-(biotic potential) c-(biotic factor) d-(all) represents the highest population that can be maintained for an indefinite period of time by a particular environment.
- 10- The population includes similar a-(individuals) b-(community) c-(ecosystems) d-(all).
- 11- a-(The decomposers) b-(Fungi) c-(Bacteria) d-(all) play a good rule in recycling of materials.
- 12- a-(Competition) b-(Climax communities) c-(Homeostasis) d-(Biomes) is the struggle between species.
- 13- a-(Competition) b-(Climax communities) c-(Homeostasis) d-(Biomes) is the maintenance of conditions within the range that the organism can tolerate.
- 14- a-(Competition) b-(Climax communities) c-(Homeostasis) d-(Biomes) are the end of succession.
- 15- a-(Competition) b-(Climax communities) c-(Homeostasis) d-(Biomes) is the division of the earth into regions by climate.
- 16- a-(Monogamy) b-(Polyandry) c-(polygyny) d-(all) is the formation of a pair bond between one male and one female.
- 17- a-(Transpiration) b-(Homeotherms) c-(Biosphere) d-(Secondary consumers) plays an important role in the water cycle.
- 18- a-(Transpiration) b-(Homeotherms) c-(Biosphere) d-(Secondary consumers) includes water, soil and air.
- 19- a-(Transpiration) b-(Homeotherms) c-(Biosphere) d-(Secondary consumers) feed on 1st consumers.
- 20- a-(Transpiration) b-(Homeotherms) c-(Nocturnal animals) d-(Secondary consumers) are those which become active during night.
- 21-The population includes a-(one species) b-(more than two species) c-(one community) d-(two communities).
- 22- The ecosystem includes a-(a biotic factor and abiotic factor) b-(biotic factor only) c-(abiotic factor only) d-(living factor only).
- 23- One of the positive impacts of man is a-(thermal pollution) b-(Oil pollution) c-(Organic pollution) d-(biological control).
- 24- One of the negative impacts of man is a-(natural reserve of certain places) b-(control of overfishing) c-(biological control) d-(organic pollution).
- 25-In competition two populations can a-(Coexist) b-(The weaker will eliminate the stronger) c-(both of them will be eliminated) d-(both a and b are right).
- 26-The visible light includes: a-(Ultra violet light) b-(Infra-red) c-(the well-known 7 colors) d-(micro waves).

أقلب الصفحة من فضلك



Answer the following questions with Labeled drawing if they needed

1- Put V 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 ()

2- 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-.....
- 3- 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

Q II: Put (✓) for the correct sentences and (X) for the wrong one:(20 mark one for each point).

31. Cercaria stage of *Fasciola hepatica* leads to: Metacercaria ().
32. Sleeping sickness' is caused by *Entamoeba* ().
33. The free living platyhelminthes are Cestoda ().
34. *Planaria* lacks nervous system ().
35. Earthworm is placed in the group Oligochaeta ().
36. Whittaker classified living organisms into seven kingdoms ().
37. Clitellum is absent in Polychaeta ().
38. Schizont stage of *Plasmodium* occurs in human liver cells ().
39. The motile zygote of *Plasmodium* is oocyst ().
40. Most species of Trematoda are marine and benthic ().
41. Phylum Cnidaria includes the organisms which are having tentacles surrounding the mouth ().
42. Linnaeus evolved a system of nomenclature called Binomial ().
43. Anus is absent in *Fasciola* and *Schistosoma* ().
44. pseudopodia in amoeba help in locomotion, engulfment, and ingestion. ().
45. Contractile vacuoles in protozoa serve the purpose of Osmoregulation ().
46. Smallest taxon of classification is Kingdom ().
47. Infective stage of *Schistosoma* is ovum ().
48. Radial symmetry is found in Cnidarians ().
49. Paramecium is characterized by the presence of Cilia ().
50. Calcareous spines present in Nematoda ().

WITH MY BEST WISHES

End

Dr. Fatma El-Zahraa A. Abd El-Aziz

- 27- The animals which are active during day time are known as a-(diurnal) b-(nocturnal) c-(Invertebrates). d-(vertebrates).
- 28- Light affects a-(the color of animals) b-(morphology) c-(reproduction) d-(all).
- 29- The animals which are active during night are known as a-(diurnal) b-(nocturnal) c-(Invertebrates) d-(Vertebrates).
- 30- The physical factor which has a bifold effect on animals is a-(temperature) b-(light) c-(UV) 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 ecosystems ().
- 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 increase diseases, and parasites as well as the decomposition of organic matter in the ecosystem ().
- 35- Oncology is the science dealing with the interactions between organisms and their environment ().
- 36- The community includes all the populations in a given area ().
- 37- The ecosystem includes all the members of the community plus the physical environment in which they live in ().
- 38- Cannibalism is a relationship in which one organism benefits and the other is not affected.
- 39- Endothermy refers to animals which control their body temperature by external means ().
- 40- Heterotherms 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- The canopy is the site where decomposition takes place in the forest ().
- 43- The photoperiod is the factor which affects the migration of birds ().
- 44- Intraspecific competition occurs among two populations for environmental resources ().
- 45- Parasitism is a relationship in which one organism benefits and the other is harmed ().
- 46- Egypt is found in desert biome ().
- 47- The canopy is the primary site of energy fixation in the forest ().
- 48- Succession is the replacement of one community by the other ().
- 49- Primary succession takes short time compared with secondary succession ().
- 50- Territory is a situation in which an animal defends an exclusive area not shared with rivals ().

Good Luck

- a-.....
- b-.....
- c-.....
- d-.....

3- Define Five only from the following: (5 degree)

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

4- Answer Five only of following themes: (10 degree)

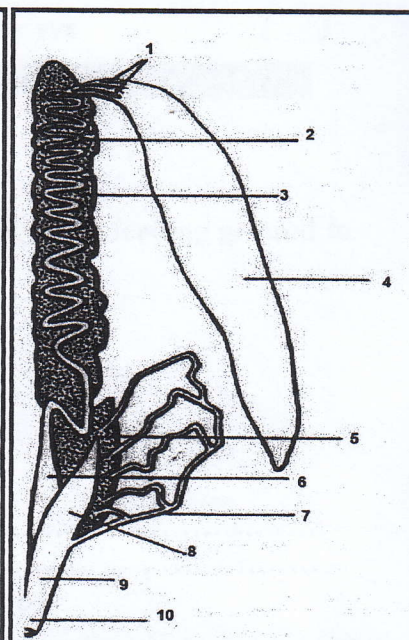
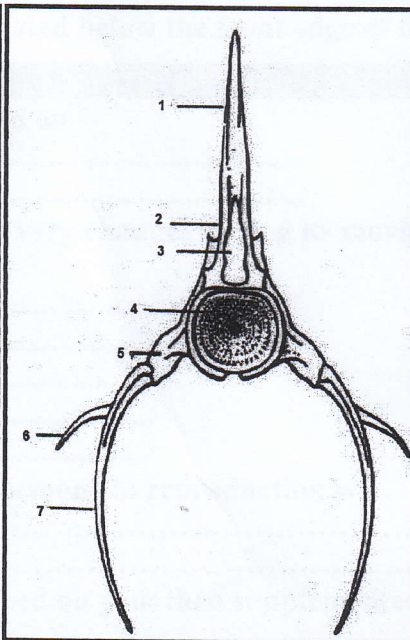
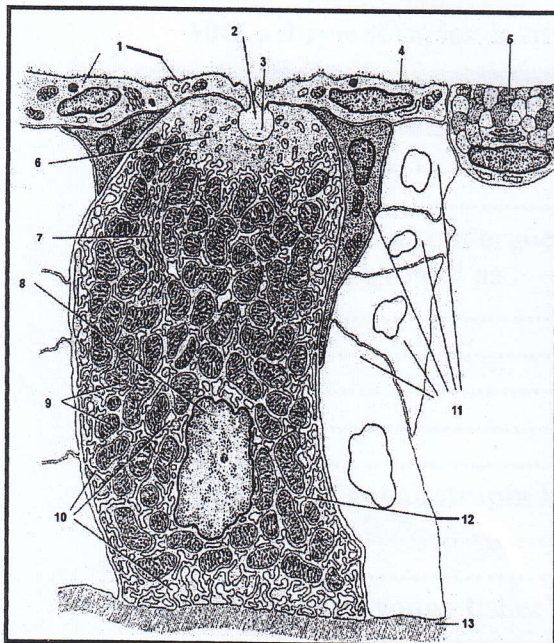
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5- Define and label each of the following items: (10 degree)

1-.....

2-.....

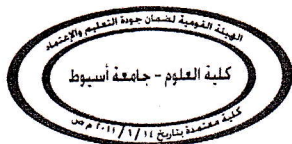
3-.....



With my best wishes.....



Assiut University
Faculty of Science
Zoology & Entomology
Department



First Semester Cytology Exam
Answer the following questions: (50 marks)



Time: 2 hour
15/01/ 2024
Level: second
Course Code: 210 Z

الامتحان في 4 ورقات

I: Choose the best single correct answer (30 marks)

- 1-are given the negative charge of the inner leaflet of PM is so important for enzymes to work.
A) Sphingomyelin B) Phosphatidylcholine C) Phosphatidylserine D) Phospholipids
- 2- checkpoint checks preparedness of the cell for mitosis.
A) G1 B) G2 C) G0 D) S
- 3-Brings the amino acids from the cytoplasm to the ribosome.
A) mRNA B) tRNA C) rRNA D) DNA
- 4-Contain no double bonds in the Acyl chain and it have a higher melting temperature.
A) Saturated lipids B) Unsaturated lipids C) Carbohydrates D) Proteins
- 5- Lipid bilayer are arranged in the center away from water is in either extra or intracellular surfaces.
A) Nonpolar B) Hydrophobic C) hydrophilic D) a & b
- 6-Type of protein known as..... are Ca^{2+} independent CAMs which depend on recognition antibody and antigen.
A) Cadherins , B) Ig-like CAMs C) Selectins D) Integrins
- 7-allow exchange of chemical/electrical information between cells.
A) Anchoring junctions B) Occluding junctions C) Communicating junctions D) Tight junction
- 8-is a complex network of proteins, glycosaminoglycans, proteoglycans which secreted by cells.
A) Filament B) cytoskeleton C) Extracellular matrix D) Intracellular matrix
- 9- On mitochondria division,molecule assembles into helical filaments, wrapping around mitochondrial tubules
A) Dynamin-related Protein 1 B) Drp1 C) Acetyl Co-A D) a & B
- 10- The glucose molecule is converted to pyruvate in the during the production of energy
A) Cytoplasm B) Mitochondria C) Golgi D) lysosomes

11-accumulated in long life cells as heart or liver cells forming lipofuscin pigment.

- A) Primary lysosomes B) Residual bodies C) Autophagy D) Secondary lysosomes

12-are those which already entered the digestion events characterized by their large size

- A) Primary lysosomes B) Heterophagy C) Autophagy D) Secondary lysosomes

13-are unique Organelle in which neuropeptides and/or hormones are packaged and stored their secretion.

- A) Peroxisomes B) Secretory granules C) large dense-core vesicles D) B & C

14- Which of these is an important constituent of the nuclear matrix?

- A) Centrosomes B) Ribosomes C) Mitochondria D) Chromatin

15-.....is close to the inner side of nuclear envelope.

- A)Chromatin islands B) Nucleolus associated chromatin C) Peripheral chromatin D)Euchromatin

16-- Nucleolus composed of densely dark packed rionucleoprotein a fiber which is composed of primary transcripts of rRNA genes known as

- A) Nucleolar organizer DNA B) Pars granulose C) pars fibrosa D) Euchromatin

17- The core ofConsists of 9 pairs (doublets) of microtubules surrounding 2 central tubules.

- A) flagella B) centrioles C) cilia D) A & C

18- Polymerization of tubulin to form microtubules by structure known as

- A)microtubules organizing centers B)dynammin-related protein C)signal recognition particle D)Non of them

19- increase the efficiency of absorption and the surface area of the cell

- A) Microtubules B) Microfilaments C) actin D) Intermediate filaments

20- Division of the Cytoplasm is considered as the

- A) Cytokinesis B) Mitosis C) Synapsis D) None of these

21-The characteristic of which of the following stages of mitosis is the separation of sister chromatids?

- A) Anaphase B) Metaphase C) Telophase D) None of these

22- phase is a short interval in which there is little or no increase in the number of cells present in the population

- A)The exponential B) The lag growth C) The stationary D) The death

23- More kinks in the tails of phospholipid molecules in the plasma membrane leading to

-
A) less fluidity B) more fluidity C) neutral of fluidity D) prevention of fluidity

24-is a spherical vesicle having at least one lipid bilayer.

- A) vacuoles B) liposome C) micelle D) lipids bilayer

25-molecules move from high concentration to low one (lipid bilayer) not need energy.

- A)Facilitated diffusion B) Passive transport C) active transport D) Massive transport

26- Ribosomes were known as..... in glandular cells.

- A) Basophilic bodies B) Nissl bodies C) ergastoplasm D) zymogen granules

27- Who proposed the Cell Theory?

- A) Charles Darwin B) Albert Einstein C) Robert Hooke D) Gregor Mendel

28-Lack a nucleus and other membrane bounded structures and contain single circular chromosome.

- A) Eukaryotes B) Plant C) Prokaryotes D) Non of them

29- Which membranous organelle is responsible for protein processing, modification, and sorting?

- A) Mitochondria B) Endoplasmic reticulum C) Lysosomes D) Golgi apparatus

30- Which of the following organelles is directly involved in the breakdown and recycling of cellular components?

- A) Mitochondria B) Peroxisomes C) Vacuoles D) Lysosomes

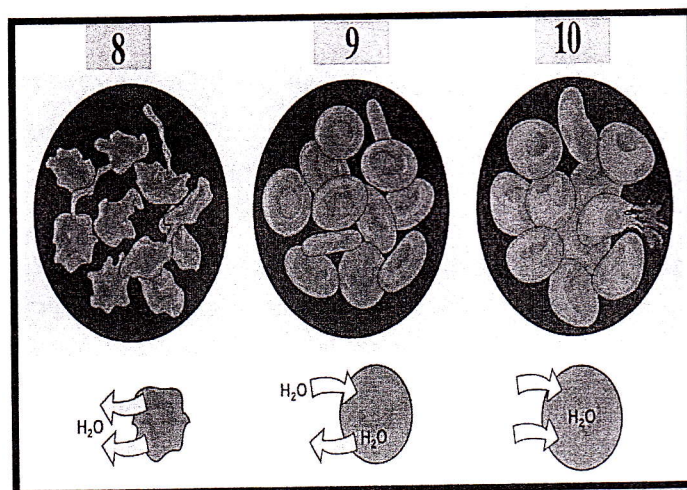
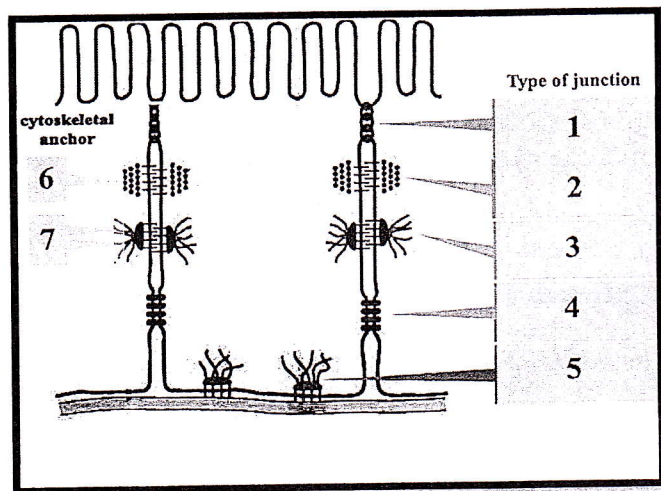
III- Write the scientific name for each of the following descriptions (10 marks)

- 1- Type of nucleus which characterized by reduction of cellular volume, chromatin condensation, and shrinkage of nuclear. (.....)
- 2- Organelle is responsible for neutralize toxins in liver cells and lacks ribophorin I and II. (.....)
- 3- Copying of genetic information from DNA to RNA called. (.....)
- 4- The phase in cell cycle which DNA replication occurs. (.....)
- 5- Identical structures that result from chromosome replication, formed during S phase. (.....)
- 6- Small electron-dense particles are composed of 4 types of rRNA and almost 80 different proteins (.....)
- 7- The nuclear division which produce only gametes ;genetically different haploid cells. (.....)
- 8- Bodies are transitory components of the cytoplasm of varied nature as lipids. (.....)
- 9- Cellular organelles are not engaged yet in digestion event characterized by its small size, obvious membrane with uniform granular contents. (.....)
- 10- Non membranous organelle serve as basal body from which cilia and flagella arise. (.....)

V- Answer the following

(10 marks)

1) write labels from (1 to 10)



- 1- Type of junction is
- 2- Type of junction is
- 3- Type of junction is
- 4- Type of junction is
- 5- Type of junction is
- 6-Type of cytoskeletal anchor is
- 7- Type of cytoskeletal anchor is
- 8-Type of osmotic transport through the membrane is.....
- 9- Type of osmotic transport through the membrane is.....
- 10- Type of osmotic transport through the membrane is.....

End of the Questions

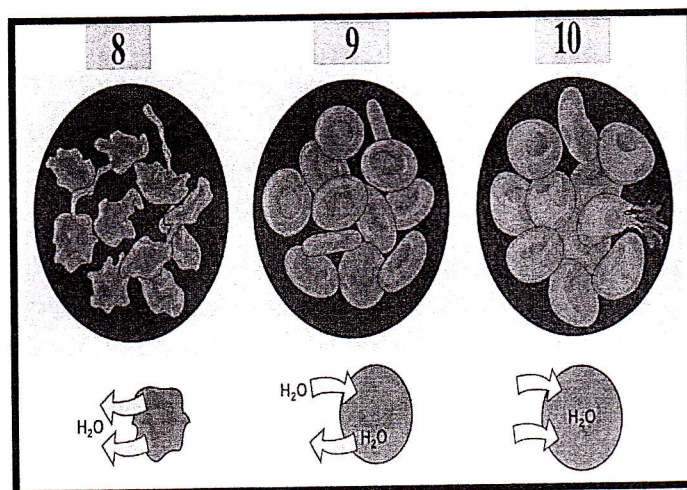
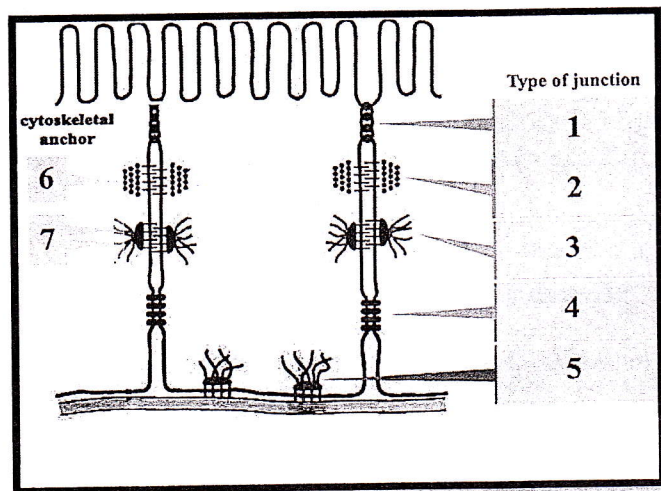
With my best wishes

Prof.Dr. Mona M. Atia

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End of the Questions

With my best wishes

Prof.Dr. Mona M. Atia



الأمتحان في ٤ صفحات

I-Fill in the space:

(16 marks)

- 1- Pars fibrosa in the nucleolus consisting of
- 2- The temporary components of the cytoplasm are
- 3- In a cell, DNA replication begins at specific locations in the genome called
- 4- The open phase nucleus contain large amount of
- 5- The primer that used to initiate DNA synthesis at known sequences in a template molecule known as:
- 6- In the mitochondria, the intermembrane space is surrounded by
- 7- The linear molecule similar to DNA except that it is single stranded and contain ribose known as
- 8- The pyruvate enters mitochondria and is converted into
- 9- Secondary lysosomes are known aswhen their contents are of extracellular origin.
- 10- The monocyclic nitrogenous bases that found in DNA are called
- 11- The division of cytoplasm is known as
- 12- Recognition of nerve cells for other nerve cells during synaptic formation is called:
- 13- The type of RNA that formed in the nucleolus from a loop of DNA is called
- 14- The transport processes that not require energy is called

- 15- The enzyme that synthesizes the new DNA by adding nucleotides matched to the template strand is called:
- 16- The appearance or disappearance of cytoplasmic inclusions depending on

II- Choose the correct answer and cite it in the answer table:

(20 marks)

1- Endogenous pigments include:

- | | |
|-------------|-----------------|
| A. carotene | B. minerals |
| C. melanin | D. Dust pigment |

2- The nuclear envelope is a parallel membrane units separated by a narrow space called:

- | | |
|-------------------------|--------------------------|
| A. perinuclear cristae | B. internuclear cristae |
| C. perinuclear cisterna | D. outer nuclear cristae |

3- The play a role in moving and shifting cytoplasmic components (cytoplasmic streaming).

- | | |
|---------------------|-----------------------|
| A. microvilli | B. phospholipid layer |
| C. glycolipid layer | D. microfilaments |

4- SER involved in the breakdown of glycogen due to the presence of certain enzyme. Which one of the following?

- | | |
|-------------------------|--------------------------|
| A. alkaline phosphatase | B. glucose-6-phosphatase |
| C. acid phosphatase | D. all of them |

5- The phase of Golgi apparatus which receives the transfer vesicles from the RER is

- | | |
|--------------------|-------------------|
| A. vesicular phase | B. mature phase |
| C. granular phase | D. immature phase |

6- In the phagocytic cells There is a lot of

- | | |
|--------------|-----------------|
| A. lysosomes | B. peroxysome |
| C. ribosome | D. kidney cells |

7- Ribosomes are composed of almost 80 different proteins and.....

- | | |
|------------------------------|------------------------------|
| A. 8 types of ribosomal RNA | B. 4 types of ribosomal RNA |
| C. 20 types of ribosomal RNA | D. 12 types of ribosomal RNA |

8- In skeletal muscle, the..... appear as a paracrystalline array integrated with thick myosin filaments

- | | |
|-------------------|-----------------|
| A. microvilli | B. microtubules |
| C. microfilaments | D. keratin |

9- Euchromatin is:

- | | |
|--------------------------|--|
| A. visible by the LM | B. represents the metabolically inactive DNA |
| C. not visible by the LM | D. granulated |

10- Meiosis I known as:

- | | |
|--------------|----------------|
| A. splitting | B. duplication |
| C. division | D. reduction |

11- In the amphipathic molecules of phospholipids, the head linked to tail by:

- | | |
|--------------------|-------------------|
| A. phosphate group | B. sulphate group |
| C. carbonate group | D. hydroxyl group |

III- Write the following data:

(7 marks)

A- The characteristics of the cytoplasm are:

1-

2-

3-

B- The membranous organelles are characterized by:

1-

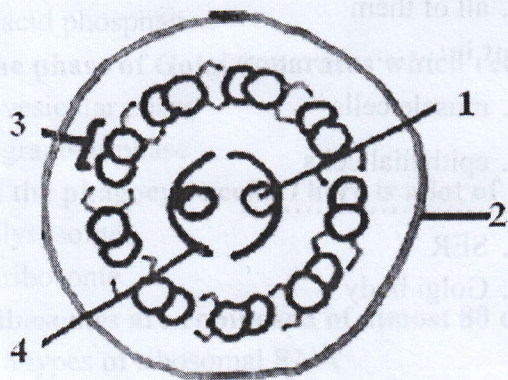
2-

3-

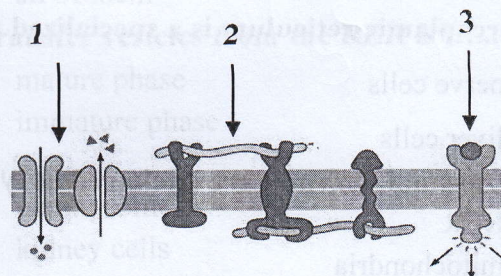
4-

IV- Write the label for the diagrams:

(7 marks)



B



1-

2-

3-

4-

1-

2-

3-

Best Wishes

Prof. Gamal EL-Sokkary



Assiut University
Faculty of Science

Zoology & Entomology First semester General Entomology Exam
Department (11 – 1 – 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. What is Deutocerebrum usually innervate?
a) Labrum b) labium c) Compound eyes d) Antennae
2. During insect respiration, air enters through tracheae by pores called?
a) Tracheoles b) Ostia c) Spiracles d) Gonopore
3. How many pairs of ganglia have fused together to form the insect brain?
a) Two b) Three c) Four d) Six
4. List the stages of the complete metamorphosis life cycle in the correct order?
a) Egg-pupa-larva-adult b) Egg-larva-pupa-adult c) Egg -numph-pupa-adult
d) Egg-numph-adult
5. Gizzard is a part of
a) Foregut b) Midgut c) Hindgut d) All of them
6. 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
7. Which of the following is the first layer of epicuticle from inner to outer?
a) Cement b) Wax c) Polyphenol d) Cuticulin
8. On which suture the anterior tentorial pits found?
a) Epistomal b) Frontoclypeal c) Occipital d) Postoccipital
9. Which of the following is the ventral sclerite of each insect body segment?
a) Sternum b) Notum c) Tergum d) Pleuron
10. Which is of the following order completely lack a Malpighian tubule system?
a) Dermaptera b) Hemiptera c) Thysanura d) Thysanoptera
11. On which abdominal segment the male external genitalia of insects usually lie on?
a) 6 b) 7 c) 8 d) 9
12. The mosquito larvae get air under water through.....
a) Air sacs b) Air bubbles c) Plastrons d) Siphon
13. Where is the digestion and absorption take place?

- a) Fore gut b) Midgut c) Hindgut d) Proventriculus

14. 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

15. Neurons always carry information toward the central nervous system.

- a) Afferent neurons b) Efferent neurons c) Internuncial neurons d) Association neurons

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 insect in apterygote undergo metamorphosis. ()
4. In insects, the circulatory system is not important in gas transport. ()
5. Ganglia within the adjacent body segment are linked together by commissure. ()
6. All cuticular structures are shed at ecdysis. ()
7. Gill is a special array of rigid hairs that create an air space next to the body. ()
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: Write the suitable terminology of the following sentences.

(5 Marks)

1. The separation of the cuticle from the epidermis. (.....)
2. Means "change of form." It's the way insects grow and mature. (.....)
3. Structure that consists of paired of segmental ganglia running along the ventral midline of the thorax and abdomen. (.....)
4. The removal of waste products of metabolism from the body, especially nitrogenous compounds (.....)
5. A thin reinforcing "wire" of cuticle winds spirally through the membranous wall of trachea vestibule to prevent its collapse under pressure. (.....)
6. The third section of the alimentary canal. (.....)
7. The major structural component of an insect's circulatory system. (.....)
8. The structure that separates the perineural sinus from the perivisceral sinus. (.....)
9. The wing region that is not contain any veins. (.....)
10. The most basal structure of the insect leg and articulate with the sternite. (.....)

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

1. The circulatory system.



Answer the following questions with Labeled drawing if they needed

1- 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 ()

2- 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-.....
- 3- 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

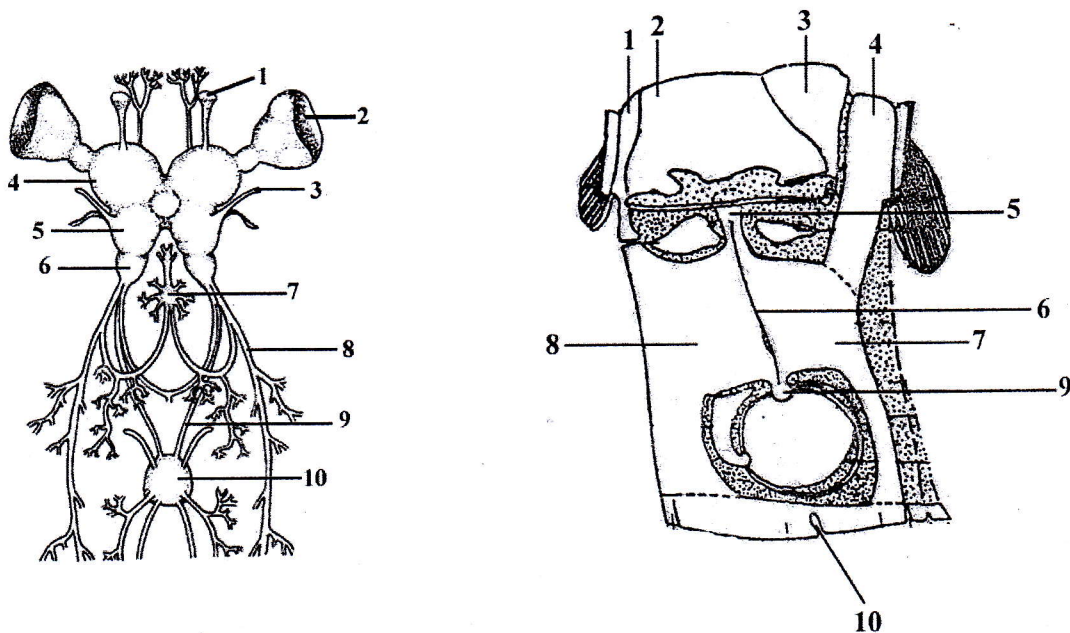
.....
.....
2. Ecdysone hormone.

.....
.....
3. Air sacs.

.....
.....
4. Malpighian tubules.

.....
.....
5. Wing venation.

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



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

1- Segmentation of head.