	Assiut University- Faculty of Science Frist Semester- Final Exam 2025-2026 Zoology & Entomology Department	Program: Chemistry/ Zoology, Chemistry/ Entomology Programs Level : (2) Date: 21/1/2026 Time: 3 h	
Course Title: invertbrates (I)		Code: 220 Z	
Instructor : Prof. Fatma El-Zahraa Abd El-Hameed Abd El-Aziz			
Important:	No. of pages 5	No. Of questions 5	Total Mark:50 degree

I. Choose the correct answer :(10 marks ,1 for each point).(Δ, ■,●)

1. Platyhelminthes are classified as:

A. Coelomates B. Pseudocoelomates C.Acoelomates D. unicellular

2. Scientist who classified living organisms into five kingdoms

A. John Ray B. Whittaker C. Carolus D. Linnaeus

3. Which class includes jellyfish?

A. Hydrozoa B.Anthozoa C. Scyphozoa D. Cubozoa

4. Trypanosomiasis' is transmitted by

A. Sandflies B. tse-tse flies C. Paramecium D. Ascaris

5. The body of flatworms is:

A. Cylindrical B. Dorsoventrally flattened

C. Segmented D. Radially symmetrical

6. The stinging cells of cnidarians are called……..

A. Nematodes B. Choanocytes C. Amoebocytes D. Nematocysts

7. Which of the following is <u>NOT</u> a cnidarian?

A. *Enterobius* B. Jellyfish C. Coral D. *Hydra*

8. The body form that is usually sessile is the…….

A. Polyp B. Medusa C. Larva D.Planula

9. Cnidarians digest food mainly by……

A. Intracellular digestion only B. Extracellular digestion only

C. Both intra- and extracellular digestion D. No digestion

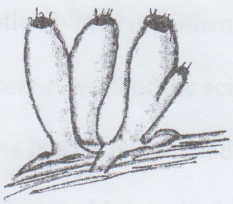
10. The infective stage of *Fasciola hepatica* is…….

A. Miracidium B. Cercaria C. Metacercaria D. Sporocyst

Δ Remember ■Understand ●Apply ◊Analysis *Evaluate ◯Create

II: Answer the Following :(10 marks) .

A. Identify the organism shown in the diagram and write its main taxonomic characteristics. (◯, ◊)



✓ **Scientific name:**

.....

✓ **main classification characteristics**

1.....
2.....
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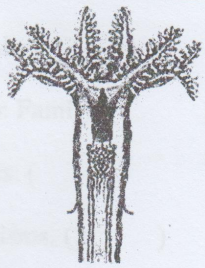

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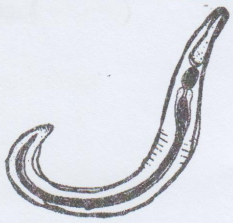


✓ **Scientific name:**

.....

✓ **main classification characteristics**

1.....
2.....
3.....
4.....

Δ Remember ■Understand •Apply ◊Analysis *Evaluate ◯Create

III: Put (√) and (X): (10 marks, 1 mark for each).(Δ, •)

1. Microfilaria - the prelarvae of filarial worms. ( )
2. Protozoa are multicellular organisms. ( )
3. Aristotle divided organisms into plants & animals. ( )
4. The second word of the scientific name refers to: Family. ( )
5. Euglena has both plant and animal characteristics. ( )
6. The kingdom Monera includes eukaryotic organisms. ( )
7. *Plasmodium* reproduces sexually in humans. ( )
8. Taxonomy deals with identification, naming, and classification of organisms. ( )
9. The nucleus responsible for reproduction in ciliates is the micronucleus. ( )
10. Turbellarians are mostly free-living organisms. ( )

١٥

IV: Match (10 marks, 1 mark for each). (* , ◊)

	Animals that live together without harm or benefit are in	1	binary fission & multiple
	Conjugation is a type of reproduction occurred in	2	the first molt
	Thin; with a carbohydrate containing glycocalyx; acts as a protective barrier	3	causes sleeping sickness
	Asexual reproduction of Protozoan happened by	4	*Paramecium*
	The first stage larva being the stage prior to	5	Rhabditiform larva
	Ciliates possess both	6	Epicuticle
	Trypanosoma	7	phagocytosis
	The process by which Amoeba engulfs food is called	8	Taxonomy
	Identification, nomenclature, description of animals are aims of	9	commensalism
	The first stage larva of Strongyloides and hookworms	10	macronucleus and micronucleus

V: Complete the Following: (10 marks, 1 mark for each). (* , ○)

1. Basic characteristics of animal classification……. , ……. ,

……. and……..

2. Cnidarians have ……..symmetry.

3. Corals belong to class……..……

4. The larval stage of cnidarians is called……

5. The digestive cavity in cnidarians is called the ……

6. The body covering of parasitic flatworms is called…… ……

7. The parasite causes Bilharziasis is …… .

8. The digestive system of cestodes is ……..

9. The adult liver fluke lives in the …….

10. The following figures (A, B, and C) represent……., …….

and……..

End of Exam

Best Wishes

Prof. Fatma El-Zahraa Abd El-Hameed Abd El-Aziz

	Assiut University- Faculty of Science **Frist Semester- Final Exam 2025-2026** **Zoology & Entomology Department**	**Program: Special Zoology** **Level : (2)** **Date: 21/1/2026** **Time: 2 hrs.**	
Course Title: Invertebrate I		**Code: 220 Z**	
Instructor: Prof. Dr. Hanaa Atef Gouda			
Important:	**No. of pages: 2**	**No. Of questions: 3**	**Total Mark: 50 degrees**

Q1. Choose between brackets: Δ Remember ■Understand •Apply **(13 marks)**

1- *Plasmodium malaria* erythrocytic cycle occurs in (cattle - human - mosquito).

2- (Choanocytes–Archaeocytes-Pinacocytes) can phagocytize food & differentiate to other cells.

3- Calcarea & Hexactinellida belong to (Cnidaria - Porifera - Ctinophora).

4- (Platyheminthes – Placozoa- Coelenterata) revealed cellular level of organization.

5- Medusae are absent in (Hydrozoa-Anthozoa-Cubozoa).

6- All (Placozoa - Parazoa - Mesozoa) are parasites in marine invertebrates.

7- Echdysozoa comprises (Nematoda - Annelida -Both).

8- (*Planaria* - *Enterobius* - *Obelia*) has both intracellular & extracellular digestion.

9- Circular muscles are absent in the body wall of (annelids - nematodes – no one).

10- Gemmules are formed by (Pinacocytes – Archaeocytes - Choanocytes).

11- Elephantitis is carried by (mosquitoes – fish – snails).

12- The relation between shrimps & sponge is (parasitism-commensalism-mutualism).

13- (Leeches – Tardigrades – Gnathostomulids) have fixed number of segments, clitellum, two suckers & two brains.

Q2. Answer six only of the following: Δ Remember ■Understand *Evaluate ○Create **(24 marks)**

1- By drawings distinguish the body wall in *Fasciola & Allobophora.*

2- List the diagnostic characters of Platyhelminthes.

Look behind please!

3- Distinguish between Polychaeta & Clitellata.

4- Classify Phylum Cnidaria, giving an example for each.

5- Demonstrate why Ctenophora differs from Cnidaria.

6- Compare movements in both Nematoda & Annelida.

7- Illustrate structure & functions of coelom.

8- Discuss how *Taenia* can adapt to its life.

Q3: Correct over the line: Δ Remember ■Understand •Apply *Evaluate **(13 marks)**

1- Palolo is a deuterosmate.

2- *Trypanosoma* belongs to Cnidaria.

3- Apical complex characterizes *Leucosolenia*.

4- Turbellaria is closely related to Annelida.

5- Excretion in Nematoda is by nephridia.

6- Coelom is thickened region serves in reproduction & secretes cocoons.

7- Gubernaculum is important in the male of *Taenia.*

8- Ookinete is the infective stage in malaria.

9- Looping, somersaulting, climbing & floating could be shown in *Heterophyes.*

10- Interstitial cells in cnidaria help in food capture, defense & attachment.

11-*Biomphlaria alexandrina* is the intermediate host of *Trichinella spiralis*.

12- All Parazoa are parasites in marine invertebrates.

13- Marine, dioecious burrowers in mud & composed of 13 or 14 zonites called priapulids.

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

د. هناء عاطف بالتوفيق و السداد

	Assiut University- Faculty of Science Frist Semester- Final Exam 2025-2026 Zoology & Entomology Department	Program: Science Level: (2) Date: 11/1/2026 Time: 2 h	
Course Title: Cytology			Code: 210z
Instructors: Assistant Prof. Dr. Shaimaa Mahmoud Saleh			
Important:	No. of pages: 3	No. of questions: 2	Total Mark: 50 degrees

1-Read the following statements and choose the most appropriate answer for each: **(25 marks; one mark each)**

1Δ- The centrosome is found in the great majority of animal cells except for a few kinds of cells such as:
a) Mature nerve cells b) RBCs c) Both a & b

2 Δ - Ribosomes are linked together along the membrane of …… to form polysomes.
a) rRNA b) mRNA c) DNA

3 Δ - The organelle that contains 20 microtubules is:
a) Centriole b) Flagellum c) Microvilli

4 ■ - The purse-string ring whose constriction results in the cleavage of mitotic cell formed from:
a) Intermediate filaments b) Microfilaments c) Microtubules

5 Δ - The nuclear envelope is two parallel unit membranes, separated by a narrow space known as:
a) Perinuclear space b) Nuclear pore space c) Perinuclear space

6 ■ - After glycolysis pyruvate enters mitochondria and converted into:
a) Glycogen b) Acetyl CoA c) FADH2 & NADH

7 ■ - In the open face nucleus, there is a large amount of:
a) Nuclear sap b) Heterochromatin c) DNA & protein

8 Δ - Addition of sulphates to secretory products takes place in:
a) Mitochondria b) ER c) Golgi

9 Δ - The movement of water through a membrane is called
a) Diffusion b) Synthesis c) Osmosis

10 ■ - Neurons spend whole life in …… phase.
a) G1 b) G0 c) S

11 Δ - Spindle formation is one of the activities that cells do during:
a) Cell growth b) Mitosis c) G1

12 Δ - The phase of cell cycle which lasts for longer duration:
a) G1 b) M c) S

13 Δ - …… is responsible for general autolysis after death.
a) Lysosome b) Ribosome c) Golgi apparatus

Δ Remember ■Understand •Apply ◊Analysis *Evaluate ◯Create

14 Δ - DNA becomes duplicated during:

a) G1 phase b) S phase c) Prophase

15 Δ - Each pair of centrioles become surrounded by an area of cytoplasm rich in protein called

a) Telomere b) microtubules organizing center c) Satellite

16 - The exchange of substances between the nucleus and cytoplasm is made only through the

a) nuclear envelope b) nuclear pores c) Both of them

17 Δ - Correct sequence of stages in cell cycle is:

a) G1,G2,S,M b) G1,S,G2,M c) M,S,G1,G2

18 ■ - .....is an enzyme that builds new DNA strands by copying an existing template

a) DNA polymerase b) DNA helicase c) DNA ligase.

19 Δ - The prokaryotic cells are differed from eukaryotic cells in presence of:

a) Double cell membrane b) Nuclear envelope c) Cell wall

20 Δ - Ribosomes consider an example of:

a) Membranous organelles b) Non-membranous organelles c) Cell inclusions

21 ■ - The function of cell coat is:

a) Protection b) Protein formations c) Not a & b

22 ■ - ..... responsible for detoxification of various noxious metabolic drugs.

a) RER b) SER c) Both a & b

23 ■ - Golgi saccules forming stacks has a .....mature surface and ..... immature surface.

a) Trans-face & cis-face b) Cis-face & trans-face c) Macro & micro

24 ■ - ..... are formed in the nucleolus and they pass through the nuclear pores to reach the cytoplasm.

a) Ribosomes b) Lysosomes c) RNA

25 ■ Ragged muscle fibers" associated with jerky movements is caused by mutation of mitochondrial…

a) lysine tRNA b) Lysine mRNA c) Both a & b

II. Mention whether each of the following statements is true (T) or false (F): (25 marks; one mark each)

26 Δ - The acrosome contains enzymes that help the sperm penetrate the egg and is derived from the Golgi apparatus.

27 Δ - Tattoo marks are endogenous pigments.

28 ■ - Nuclear pores are formed by the fusion of the inner and outer nuclear membranes.

29 ■ - Lipid molecules can "flip-flop" from one monolayer to the other.

30 Δ - Lipofuscin pigment is called the age pigment.

31 Δ - Melanin pigment is present in the cells of the hair and skin.

32 ■ - Sex chromatin represents one type of euchromatin.

33 ■ - Autolysosomes are primary lysosomes able to digest extracellular structures.

34 Δ - Cell inclusions are living structures.

35 Δ-Pyrimidines are dicyclic, each having a sixmembered ring; and include Cytosine (C) and Thymine (T).

36 ■ - The pars granulosa is composed of dense filamentous material closely associated with the nucleolar organizer.

37 Δ -- t RNA, this type of RNA is formed inside the nucleus from a special type of DNA molecule.

38 ■ - Lipid-secreting cells are expected to be rich in the Golgi body.

39 Δ - Somatic cells divide by mitosis only.

40 ■ - Lectins is a special proteins, recognise specific oligo-saccharide side chains and bind to them.

41 ■ - Microtubules are concerned with the movement of microvilli.

42 ■ - The cell coat consists of glycolipids and phospholipids.

43 Δ - Lysosomes are produced by the nucleus and cell membranes.

44 Δ - The tip of microvilli of absorptive cells contains alkaline phosphatase, which is important in absorption.

45 ■ - Chromatin fibers are observed only in the interphase nucleus.

46 Δ - Hemoglobin and hemosiderin are endogenous pigments.

47 ■ - At the end of prophase, the nuclear membrane and nucleoli disappear.

48 Δ - The Krebs cycle takes place in the mitochondrial matrix.

49 Δ - Chromatin is formed chemically of DNA and histone.

50 ■ - Secretory granules of the Golgi apparatus usually bud from the cis face.

End of Exam

Best Wishes

Assistant Prof. Dr. Shaimaa M. Saleh

Faculty of Science Assiut University

Dept. of Zoology

Exam of Animal Ecology Code No. 225Z

Credit hour system 2nd level. January 2025-2026

Answer the following questions:

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

1-An assemblage of the same individuals in a given area.
2- The absolute quantity of water vapor present in the air.
3-The struggle between two individuals.
4-The role played by the organism.
5-A group of organisms found at the base of the food pyramid.
6-A type of pollution results from building dams and barrages on rivers.
7- The individual female gains two or more males
8-The number of deaths in a given time period.
9-Species that sometimes regulate their body temperature and sometimes do not.
10-A relationship in which one organism benefits while the other is harmed.

B- Write the missing word or words in the following: (10 marks)

1- The three basic classes of organisms in a food web includes ……,…… ……, ……..
2-…… are the producers in the ecosystems which live in very deep water while ……..are the decomposers.
3- ……..……is a type of reproduction in which the ova need to be fertilized to develop.
4-……..……is the eating of one living organism (prey) by another (predator).
5-……..……..is killing and eating an individual of the same species.
6-……..……...in the ecosystem include plants and animals.
7- Individuals are distributed……..…….. if the position of each is independent of the other's.

اقلب الصفحة من فضلك

C-Choose the correct answer from the following :(10 marks)

1-The visible light includes (Ultra violet light-Infra red-the well known 7 colors).

2-The animals which are active during day time are known as (diurnal-nocturnal- both).

3-Light affects (the color of animals- morphology-both).

4-Stenotherms are (widely distributed-restricted in their distribution-both).

5- The temperature affects (the physiology of animals- morphology-both).

6- The maximum rate at which a population can increase under ideal conditions is known as (biotic potintial- biotic potential- biotic potntial.

7-A large numbers of young is characteristic of (short lived animals – long lived animals – both).

8- The organisms that make their own food are known as (decomposers-producers- consumers).

9- The (carrying capacity-biotic potential–biotic factor) represents the highest population that can be maintained for an indefinite period of time by a particular environment.

10- The population includes similar (individuals- community- ecosystem)

D- Answer the following: (20 marks)

1- Apply your knowledge to analyze some of the abiotic factors which you may find in a pond.

2-Analyze the causes of death at high temperature.

3-Apply your knowledge on how light affects the behavior of animals.

4- On the light of your study of ecology: write three Recommendations (توصيات) for the government.

5- Apply your knowledge on how animals modify toward moisture.

Good Luck

Assiut University,
Faculty of Science,
Zoology Department,
Zoology Section,

Fish Biology Final Exam
Jan. 2025/2026

Date: 16/01/2026
Time: 2 hour
Level: second
Course Code: 280Z

Answer the following questions with Labeled drawing if they needed
Exam in TWO pages

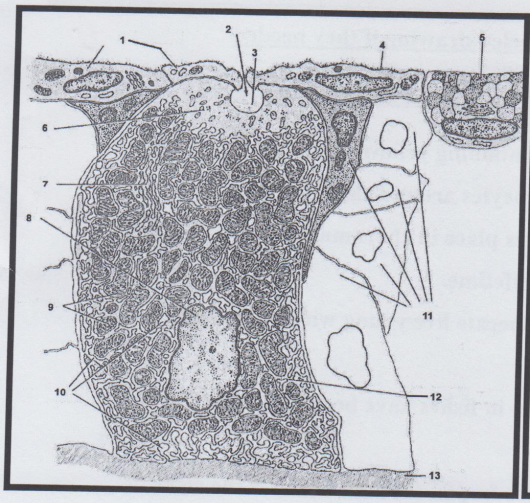
1- In table Put √ or X in front of following sentences:- (11 degree)

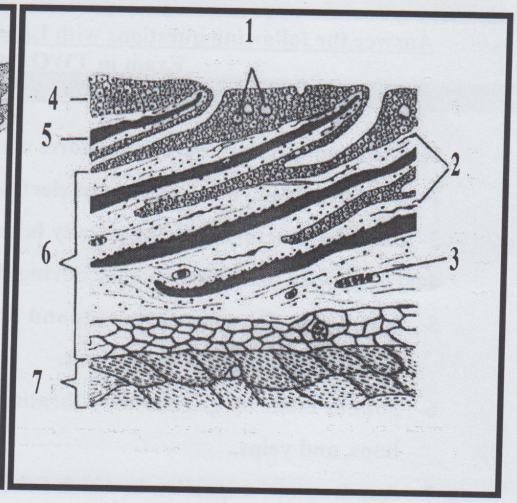
1- Melanophores are chromatophores containing yellow pigment. ( )
2- Mormyrids have one column of electrocytes around caudal peduncle. ( )
3- Light production in fishes usually takes place in choromatophores ( )
4- Iteroparity fishes spawn once during lifetime. ( )
5- Viviparous fishes incubate eggs 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 ( )
11- Muscles is on of the sound producing structures in fishes ( )

2- Answer SEVEN only of following themes:- (28 degree)

1- Diagrammatically shows possible relationships among environmental factors, receptors, endocrine organs, and reproductive activity.
3- What are the advantages of indeterminate growth in fish?
4- Table the scale types, occurrence and features
5- Diagrammatically shows the elements of branchial support based on dogfish
6- Mention the different fish feeding types, based on the mouth
7- Mention the types of migrations in fish
8- Compare between spawning behavior of oviparous fishes

3- In TABLE Define and label each of the following items:- **(11 degree)**





1-.....

2-.....

Best wishes.....,

امتحان التحريري - الفصل الدراسي الأول
للعام الجامعي 2025/2026 م

القسم الذي يقدم المقرر: الوراثه　　اسم المادة: اساسيات الوراثه　　كود المقرر: 215 ز
الزمن: ساعتين

لجنة الممتحنين: د/ مرفت محمد حشاد　　د/ السيد عبد المنصف محمد
المراجع الداخلي: ا.د/ جمال ابراهيم احمد
تاريخ الامتحان: 16 / 1 / 2026

ملحوظة الامتحان مكون من ورقتين

اجب عن جميع الاسئلة الاتية

السؤال الأول: ضع علامه (√) او (×) امام العبارات التاليه بما يناسبها ثم قم بعمل جدول في كراسه الاجابه يحتوى فقط على رقم الجمله و العلامه المناسبه لها : - (20 درجة)

-1	الصفات الهولاندريه هي صفات تحمل علي كروموسوم Y
-2	في حاله الـ Dominant epistasis ينتج عن تزاوج الافراد الخليطه لكلا الموقعين النسبه 12 : 3 : 1
-3	التتابع TTGACA يوجد في المنطقه 35- في الـ Promoter في الكائنات بدائيه النواه
-4	يجري التلقيح الاختباري للتأكد من التركيب الوراثي للأفراد الاصيله
-5	يبدأ النسخ قبل انتهاء الترجمه في الكائنات حقيقيه النواه
-6	التلقيح الاختباري في حاله السياده الجزئيه (Partial dominance) يعطي نسبه 1 : 2 : 1
-7	يوجد 3 انواع فقط من الـ RNA
-8	الادينين و السيتوسين من البيورينات
-9	في نبات الدخان فان التزاوج بين افراد ذات التركيب الوراثي (S1S2 انثي S1S3 X ذكر) ينتج عنه التراكيب الوراثيه التاليه (S1S2, S2S3)
-10	تساعد الحراره في تحديد الجنس في كل من الزواحف و الطيور
-11	A + C = G + T = 50 %

امضاء المراجع الداخلي　　امضاء لجنة الممتحنين

-12	في الانسان يشير التركيب الوراثي XXY ,47 الي متلازمه كلاينفلتر
-13	التركيب الوراثي XO في حشره النطاط (Grasshoppers) يكون ذكر
-14	التلقيح الاختباري في حاله الـ Duplicate dominant genes يعطي نسبه 1 : 3
-15	فصيله الدم تعتبر ABO مثالا للسياده المشتركه (Codominance)
-16	الصفات المتأثره بالجنس تخضع لتأثير الهرمونات
-17	تحدث الترجمه في السيتوبلازم في كل من بدائيه و حقيقيه النواه
-18	التلقيح الذاتي للافراد AaBbCC يعطي 9 انواع من التركيب الورلثيه في النسل
-19	الثايمين من البيرميدينات
-20	الفرد ذو التركيب الوراثي AABbCCDdEe يمكنه تخليق 8 انواع من الجاميطات

السؤال الثاني (18 درجه):

1- اذكر وظيفه كل من الانزيمات التاليه : **(12 درجه)**

1- DNA Polymerase β　　2- DNA Helicase　　3- DNA Polymerase I

4- Poly A polymerase　　5- Topoisomerase　　6- Primase

7- RNA Polymerase II　　8- DNA Polymerase II

2- عرف المصطلحات التاليه : **(6 درجات)**

1- Splicing　　2- Exons　　3- Capping

السؤال الثالث (12 درجه موزعه بالتساوي):

1- اشرح مع الرسم (ان امكن) مرحله الاستطاله في عمليه الترجمه.

2- اكتب نبذه مختصره عن المراحل المختلفه لتفاعل البلمره المتسلسل (PCR).

3- اكتب نبذه مختصره عن الجينات المميته مع ذكر امثله.

امضاء المراجع الداخلي　　امضاء لجنة الممتحنين

	Assiut University- Faculty of Science Frist Semester- Final Exam 2025-2026 Zoology and Entomology Department		Program: Chemistry and Entomology Level : (2) Date:23/1/2026 Time: 2 h
Course Title: General Entomology			Code: 240 Z
Instructors: Dr. Doaa S.Mohamed			
Important:	No. of pages 4	No. Of questions 5	Total Mark:50 degree

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

Answer the following questions **(50 Marks)**

First Question: Complete the following sentences: **(20 Marks)**

1. What are epidermal cells secreted first at molting?.....
2. It is the gland that secretes ecdysone hormone .....
3. The protocerebrium usually innervate.....
4. In all insects, the basic male genitalia derived from a pair of.....
5. The wing bearing thorax enlarged and subdivided into an anterior large..... and posterior small postnotim.
6. The halter is a modification of the posterior pair of wings of order.....
7. The ovipositor of female insects usually lies on the abdominal segments number.....
8. Many aquatic insects get air through hollow breathing tubes called.....
9. Individual nerve cells connect with one another through special junctions called.....
10. List the stages of the incomplete metamorphosis life cycle.....
11. An internal extension of the cuticle that act as a point for muscle attachment.....
12. A structure inside the head, serve as an internal truss called.....
13. There is a mechanosensory organ on the pedicel of insect's antenna called.....
14. The angle between costal and anal margin called.....
15. The origin of midgut is.....
16. The valve that found between foregut and midgut is.....
17. After moulting, an arthropod is described as.....
18. In bees, crop is called as .....where nectar conversion occurs.

19. The heart, is divided segmentally into chambers that are separated by valves called.....

20. The Malpighian tubules number varies depending on insect species from.....to.....

Second Question: Give a reasons of the following sentences. (5 Marks)

1. Overwintering insects often sequester enough ribulose, trehalose, or glycerol in the plasma.

   .....

   .....

2. The regenerative cells of midgut function as stem-like cells.

   .....

   .....

3. Cryptonephridial arrangement of Malpighian tubules well developed in insects living in very dry habitats.

   .....

   .....

4. The taenidia winds spirally through the membranous wall of the trachea.

   .....

   .....

5. The wing venation of insect is important.

   .....

   .....

Third Question: Write the functions of the following: (5 Marks)

1. **Air sacs.**

   .....

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2. **Hindgut.**

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3. **Circulatory system.**

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4. **Antenna of insects.**

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5. **Ecdysone hormone.**

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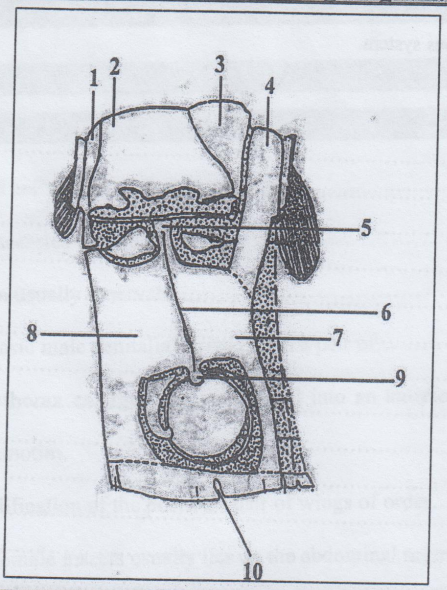
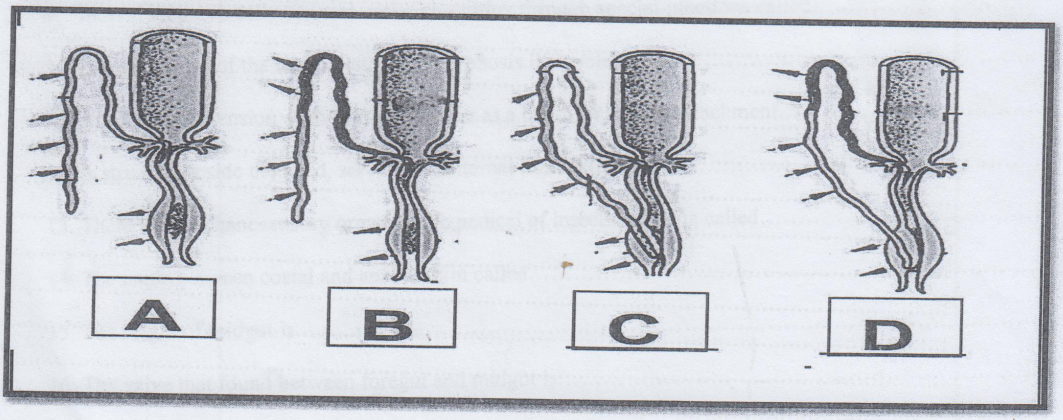
Fourth Question: Define and labeling the following diagram. **(10 Marks)**

Part (A)



Part (B):Define, the type of arrangement, and the order of each one:



Fifth Question: Write short notes about five parts only of the following: (10 Marks)

1- Segmentation of head.

2- The digestive tract shape varies depending on the type and nature of the food.

3- The leg pretarsus.

4- The components of central nervous system.

5- Orientation of insect mouth-parts.

6- The appendicular ovipositors.

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With best wishes

Dr/ Doaa S. Mohamed