3- Answer SEVEN only of following themes:- (21 degree)

1- Classification of fishes according to their food and feeding habits.

2- If you think that you have a new fish species for a region, how you identify it?

3- Diagrammatically shows the structure of the chloride cell in fishes.

2- Diagrammatically shows the different types of scales in fishes.

3- Explain the Egg and larvae osmoregulation.

4- Compare between Mass and Polyandrous spawning.

5- Significance of sound in fishes.

6- Possible relationships among environmental factors, receptors, endocrine organs, and reproductive activity.

7- Relationship of branchial septum and gill tissue in fishes.

8- Representive shapes of caudal fins in fishes.

4- Define and label each of the following items:- (4 degree)

1-.....

$$Ln = a + \frac{(L - a)(Vn)}{Vr}$$

With my best wishes.....,

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

Final Fish Biology Exam
Jan. 2024/2025

Fish Biology Course
Time: 2 hour
Level: second
Course Code: 280Z

Answer the following questions with Labeled drawing if they needed

1- Put √ or X in front of following sentences and correct the wrong one:- (10 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- **Ammonia is an effective factor for fish growth** ( )
10- **Ominvorous fishes may feed on plants and animals** ( )

2- Define each of the following:- (15 degree)

1- **Standard length**
2- **Bioenergetic equation**
3- **Stenohaline fishes**
4- **Growth in fishes**
5- **Fecundity**
6- **Gonochoristic individual**
7- **Mimicry**
8- **Sexual dimorphism**
9- **Homeostasis**
10- **The cycle of migration**
11- **Pelagic spawning**
12- **Feminization**
13- **Overwintering migration**
14- **Mass spawning**
15- **Sexual dimorphism.**

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

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

8- The organisms that eat other organisms are known as (decomposers- producers- consumers).

9- The negative impact of man includes (overhunting- Species preservation- biological control-all).

10- The ecosystem includes (the biotic factors- the abiotic factors- both)

C- Answer the following: (10 marks):

1- Apply your knowledge on how we can conserve life on the earth.

2-Analyze the causes of a stable ecosystem.

3- On the light of your study: write three recommendations (توصيات) to prevent thermal pollution.

Good Luck

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

1- The highest population that can be maintained for an indefinite period of time by a particular environment.
2- Animals which depend on internal heat production.

3- A relationship in which one organism benefits and the other is harmed.

4- All the members of the community plus the physical environment in which they live in.
5- A biome with heavy rainfall and constant warmth.
6- A biome with sparse rainfall and extreme daily temperature fluctuations.

7- The struggle between different species for the same limited resources.

8- The role the species plays.
9- A stage of succession in which the populations of plants and animals exist in balance with each other and the environment.
10- A gas needed by all living things because it is part of the structure of amino acids.

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

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

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

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

اقلب الصفحة من فضلك

Faculty of Science **Assiut University**

Dept. of Zoology

Exam of Animal Ecology Code No. 225 Z

2024-2025

Answer the following questions:

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

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

4-

B- Functions of the centrioles are:

1-

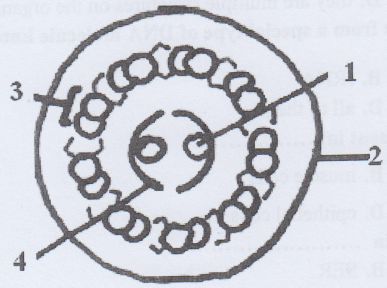
2-

C- Functions of the RER are:

1-

2-

IV- Write the label for the diagrams: **(7 marks)**



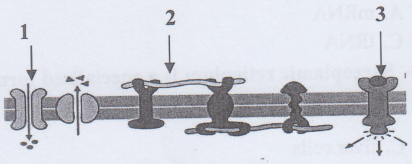
1-

2-

3-

4-

B



1-

2-

3-

Best Wishes

Prof. Gamal EL-Sokkary

12- **In the metaphase, the chromosomes migrate to: .....**

A. the two sides of the cell
B. the equator of the spindle
C. one side of the cell.
D. the nucleus

13- **Genetic abnormalities of spectrin structure lead to: .....**

A. cell division
B. membrane fluidity
C. membrane transport
D. anaemia

14- **The centromeres still intact in: .....**

A. anaphase II
B. anaphase I
C. metaphase I
D. metaphase II

15- **Each single strand of DNA is a chain of .....**

A. nucleotides
B. pentose sugar
C. nitrogen bases
D. phosphor

16- **Mutation to the gene encoding subunit 4 of the NADH-C0Q reductase causes: .....**

A. Kaerns-Sayre syndrome
B. ragged muscle fibers
C. Leber's syndrome.
D. all of them

17- **Which one of the following statements concerning cilia is FALSE?**

A. they are nearly identical to basal bodies
B. they contain dynein arms
C. they contain 9 pairs of microtubules
D. they are multiple structures on the organism

18- **The type of RNA that formed inside the nucleus from a special type of DNA molecule known as: .....**

A. mRNA
B. rRNA
C. tRNA
D. all of them

19- **Sarcoplamic reticulum is a specialized form present in: .....**

A. nerve cells
B. muscle cells
C. liver cells
D. epithelial cells

20- **Lyzosomal enzymes are packaged as lysosomes in .....**

A. RER
B. SER
C. mitochondria
D. Golgi body

The answer table

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

III- Write the following data: **(8 marks)**

A- The characteristics of membranous organelles are:

1-

2-

3-

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13- The type of RNA that formed in the nucleolus from a loop of DNA called nucleolar organizers is called .....

14- The transport processes that requires energy is called .....

15- The enzyme that synthesizes the new DNA by adding nucleotides matched to the template strand is called: .....

II- Choose the correct answer and cite it in the answer table: (20 marks)

1- Exogenous pigments include:
A. lipofuscine B. melanin
C. minerals D. hamoglobin

2- The nuclear envelope is a parallel membrane units separated by a narrow space called:
A. perinuclear cristae B. internulear cristae
C. perinuclear cisterna D. outer nuclear cristae

3- The pores of the cell membrane are lined with:
A. protein layer B. phosphlipid layer
C. glycoprotein layer D. glycolipid layer

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- The lysosomes are present in almost all cells, but they are particularly abundant in:
A. phagocytic cells B. liver cells
C. muscle cells 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- The "purce-string" ring in the dividing cell formed of .....
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

الأمتحان فى 4 صفحات

I-Fill in the space: **(15 marks)**

1- In the nucleolus, the maturing ribosomes are called Pars .....

2- The ..... are temporary components of the cytoplasm.

3- In a cell, DNA replication begins at specific locations in the genome called .....

4- RER is prominent in cells specialized for ..... secretion

5- The artificial DNA that used to initiate DNA synthesis at known sequences in a template molecule known as: .....

6- In the mitochondria, the intracristal space is surrounded by .....

7- The linear molecule similar to DNA except that it is single stranded and contain ribose instead of deoxyribose known as .....

8- In the cytoplasm, glucose is converted by glycolysis to: .....

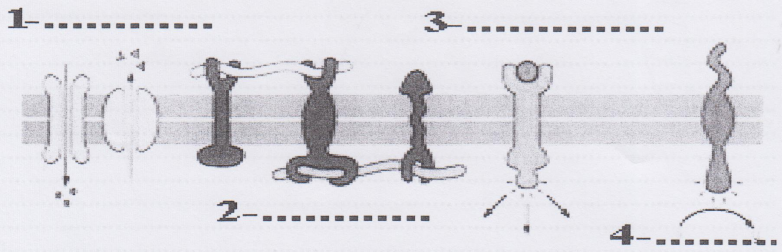
9- Secondary lysosomes are known as ..... when their contents are of intracellular origin.

10- The monocyclic nitrogenous base that found in DNA is called .....

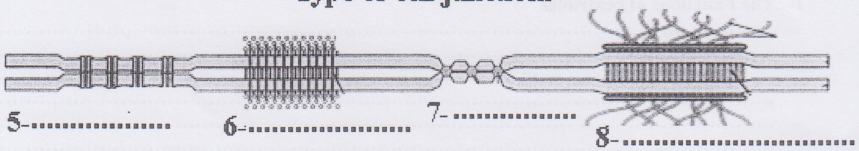
11- At the base of each cilium and flagellum, there is a ..... which identical to the centriole.

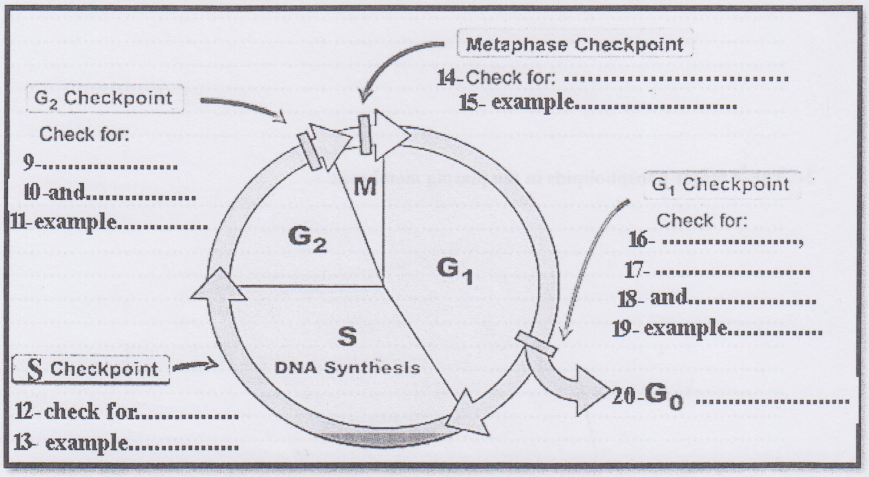
12- Recognition of nerve cells for other nerve cells during synaptic formation is called: .....

Q4: write labels from (1 to 20) **(20 M, each point 1 M)**



Type of cell junctions





With my best wishes

Prof.Dr. Mona M.Atia

Q 3: Write briefly about (2) only from the following: (10 marks)

1- **Compare between prokaryote and eukaryotes chromosome**

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2- **The Functions of centrioles**

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3- **The 4 major phospholipids in the plasma membrane**

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9- Membranous organelle Lacks ribophorin I and II- on Its membrane and responsible for lipid and carbohydrates synthesis is.....

a) SER b) RER c) lysosome d) Golgi apparatus

10- Transfer RNA (tRNA) carries amino acids from the cytoplasm to the .....

a) RER b) ribosome c) SER d) nucleus

Q2: Put √ OR × in the front of wrong or true answer: (10 marks)

1- In eukaryotic transcription and translation occurs in the cytoplasm. ( )

2- There are 4 major phospholipid in the plasma membrane have choline bearing. ( )

3- Tight junction Integral membrane proteins connect a cell's cytoskeleton to another cell or extracellular matrix. ( )

4- Type of nucleus in which there is a large amount of nuclear sap known as the condensed nucleus. ( )

5- Meiosis is a form of cell division which results in the creation of gametes or sex cells. ( )

6- The Chromatin is an important constituent of the nuclear matrix ( )

7- Types of Regulatory Molecules, together act as a checkpoint are Cyclin dependent kinases ( )

8- Deoxyribose is the sugar present in the nucleotide DNA ( )

9- Extracellular matrix is a complex network of proteins, glycoprotein, glycosaminoglycans and two proteoglycans. ( )

10- If the cell is exposed to a hypertonic environment the cell will shrivel because of loss of water. ( )

Assiut University
Faculty of Science
Zoology & Entomology
Department

Time: 2 hour
Level: two
Course Code: 210Z

Final Exam of Cytology (11/1/ 2025)
Answer the following questions: (50 marks)

الإمتحان فى 4 صفحات

Q 1: Choose the best single correct answer (10 marks)

1- ..... The longest stage in the cell cycle is

a) Interphase b) Anaphase c) Metaphase d) None of the them

2- Which of the following is responsible of fluidity of the cell membrane?

a) kinks in the tails b) Glycolipids c) Proteins d) Glycoprotein

3- The process of cell engulfing a solid particle is known as.....

a) Endocytosis b) Pinocytosis c) Exocytosis d) Phagocytosis

4- The core of .....Consists of 9 pairs of microtubules surrounding 2 central tubules.

a) flagella b) microvilli c) cilia d) a &c

5- .....are give the (-) charge of the inner leaflet of PM is so important for many enzymes to work.

a) sphingomyelin b) phosphatidylserine c) phosphatidylcholine d) phospholipids

6- Membrane..... Allows membranes to fuse and mix molecules, cell signalling and cell division

a) pinocytosis, b) phagocytosis c) fluidity d) exocytosis

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

a) Chromatin islands b) Nucleolus chromatin c) Peripheral chromatin d) Euchromatin

8- Egg and sperm recognition mediated by.....

a) cell coat b) glycocalyx c) protein only d) a &b

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6- Write on the respiratory quotient (RQ):

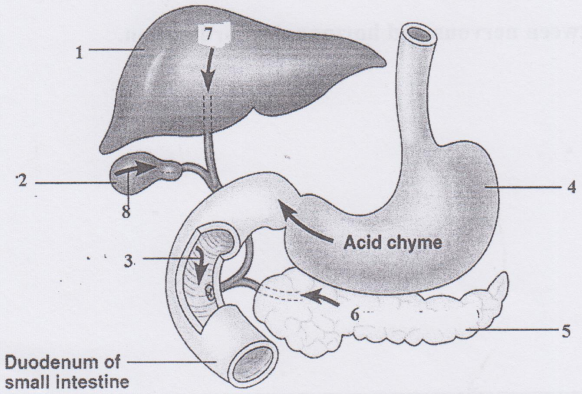
Good luck

Dr. Hossam El-Din M Omar, Prof. of Physiology

3- **Mentation the normal and abnormal constituents of urine.**

4-**Write on the hormones secreted by the anterior lobe of pituitary and their functions**

5- Write the labeled correspond the number 1-8 in the diagram. (4 Marks)



12-Animals have sense organs to provide them with information about their environment. ( ).

13- Long time regulation of food intake is concerned with preventing overeating at meal. ( )

14-Gastric ulcer is erosion of stomach wall. ( )

15-The spinal cord is not protected by the vertebrae, meninges and cerebrospinal fluid. ( )

III- Answer on FIVE OLY of the following questions (20 Marks)

1-Mention the components of reflex arch.

2- Compare between nervous and hormonal co-ordination.

17. Which is the dominant method of carbon dioxide transport?
a. bound to haemoglobin b. bound to oxygen d. dissolved in plasma as a gas
d. dissolved in plasma as bicarbonate ions

18. The posterior pituitary stores and releases.....
a. growth hormone and prolactin. b. prolactin and oxytocin.
c. oxytocin and antidiuretic hormone (ADH) d. ADH and growth hormone

19-Which of the following is (are) responsible for the release of surfactant molecules into the air-filled lumen of the alveoli?.....
a. type I alveolar cell b. type II alveolar cell c. lung macrophages d. a and b only

20-Stem cells in bone marrow are unspecialized cells that retain the capacity to divide and differentiate to.....
a- erythrocytes b-leukocytes c-thrombocytes d-all are true

II- Put true (T) or false (F) for each one (15 points)

1-Systole is the contraction of heart chambers; diastole is their relaxation. ( )

2- The Elasticity and vital capacity of lungs were decreases with age. ( )

3. Soluble fiber can help in regulation of cholesterol. ( )

4. Cholesterol is precursor molecules of steroid hormones. ( )

5. When more calories are consumed than needed for ATP production, muscles synthesize lipids from glucose or amino acids. ( )

6. Sinuo atrial (SA) the pacemaker of the heart is found in left atrium. ( )

7. Atherosclerosis is due to a build-up of glycogen under the inner lining of arteries. ( )

8. Automatic breathing is influenced by activity of chemoreceptors that monitor blood $PC0_2$, $P0_2$, & pH in medulla oblongata and in large arteries near heart. ( )

9. Infiltration of large amounts of fluid through the glomerular capillaries into Bowman's capsule not dependent on sympathetic nervous system and hormones. ( )

10. Creatinine as normal component of urine is produced as a result of the breakdown of creatine phosphate in muscle tissue. ( )

11. Myelin sheath is a fatty layer covering nerve fibers. ( )

Zoology Department

قسم علم الحيوان

Final Exam: Physiology 1 (217Z) **Time: Two Hours**
Chemistry/Zoology Students **First Semester 2024/2025**
Date of Exam. 5 /1/ 2025

1-Choose the correct answer: (15 points)

1-Macronutrients in includes all the following except .....
a- Proteins b- Lipids c- Carbohydrates d-vitamins
2-Triacylglycerols are the products of a reaction in which three OH groups of glycerol are esterified with.....
a-fatty acids b-amino acids c-glycogen d- cholesterol
3-Symptom of malnutrition includes.....
a- weight loss b- lack of energy and strength c-anemia d- all are true.
4- In gastric mucosa HCl secreted by.....
a-Parietal cells b-Chief cells c-mucosa cells d- all cells are true.
5- GLUT transporters bring ..... into the cell via facilitate diffusion
a-glucose b-fatty acids c-amino acids d- vitamins
6- Polyunsaturated fatty acids are precursor molecules .....
a- steroid hormones b- vitamin D c- bile salts d-All are true

7- Number of iron atoms in one hemoglobin molecule are.....
a. 1 b. 3 c. 4 d. 8
8-Haematocrit value is the ratio of.....
a. WBC to plasma b. Platelets to plasma c. RBCs to plasma d. Total blood cells to plasma

9-Bile reduces the surface tension and causes.....
a. Emulsification of fat b. Digestion of fat c. Absorption of fat d. All of the above

10. The primary target of the hypothalamus is the.....
a. adrenal gland b. gonads c. pituitary gland d. thyroid gland
11. An organ or structure that is not a component of the urinary system is the:
a. kidney b. urinary bladder c. ureter d. adrenal gland.
12. The urinary system is the principal system responsible for:
a. removal of carbon dioxide. b. water and electrolyte balance . c. excretion of toxic nitrogenous compounds. d. b and c
13. Schwann cells are located in the.....
a. PNS b. CNS c. ANS d. a, b and c
14. Sensory neurons transmits information from the..... to the CNS.
a. skin b. eyes c. ears d. All of them
15. Amount of air moved into or out of lungs during a single respiratory cycle is.....
a. tidal volume b. vital capacity c. total capacity d. inspiratory reserve volume
16. Which of the following is not part of the respiratory system?.....
a. Nose b. Oral cavity c. Pharynx d. Trachea

-A: Vitamin A.
-B: Vitamin K & B .
-C: Vitamin K only.
-D: Not the above.

10-Taking of excess of certain vitamins in food leads to increase of probability of clot formation particularly in blood-disease patient and example of this vitamin is:-

-A: Vitamin K
-B: Vitamin C.
-C: Vitamin D
-D: Not the above.

Q3- Answer 5 questions only: (20 marks: 4 marks each)

1- Write on the steps of urine formation with drawing nephron unit and its illustrations.
2-Explain the steps of Cardiac beat with drawing ?
3- Discuss the pancreatic enzymes and its role in digestion?
4- Discuss the biological function of nutritional lipids. (6 items)
5- Explain the synthesis of hydrochloric acid in the stomach?
6-Discuss the blood and lymph pathways of intestinal absorption?
7- Compare between the following according to functions and deficiencies: Vitamin E, Potassium, iodine and Vitamin C.

With great success

Prof. Dr. Mohamed Bassam Al-Salahy Elbradei

20- In spite of the Bile juice secreted ¾ Liter per day from the gall bladder which has no digestive enzymes, it participate in rising fat digestion 3 times.( )

Q2-MCQ Choose the appropriate letters A, B,C or D. (10 Marks: one mark each):-

1-Derived Lipids include:-
-A: Lipoproteins
-B Waxes
-C: Sex hormones
-D: Not the above.

2-Blood sugar between meals is maintained at normal level by taking glucose from:-
-A: The liver glycogen.
-B: The muscle glycogen.
-C: Gluconeogenesis takes place in the liver
-D:All the above except B.

3-Function of vitamin A includes:-
-A: It synthesizes a photosensitive pigment called rhodopsin (or visual purple in rods.
-B: It synthesizes a photosensitive pigment iodopsín in the Cones which responsible for vision in bright and colored light.
-C: Glycoprotein synthesis and this protects the mucosa
-D: All the above.

4- The region of renal medulla contains some parts of nephron such as:-
-A:Some parts of proximal convoluted tubules.
-B: Some Malpighian corpuscles.
-C: Some parts of Henle's loop and parts of collecting tubules
-D: all the above except A.
-C: Vitamin B12 absorption.

5- Secondary active transport characterized by:-
-A: It can transport (symport)sodium and glucose into the cells.
-B : It participate in antiport cellular transport of sodium and calcium.
-C: Energy used is the generated from of electrochemical potential.
-D: All the above.

6-Osmosis cellular transport characterized by:
-A: Water moves from high to low concentrations of water.
-B:Sodium ions moves from high to low concentrations of water.
-C: It does need neither protein carriers or channels.
-D: the above B & C.

7-Deficiency of vitamin D leads to:
-A:Bowed legs and deformity of the thorax and sternum (like "*pigeon chest*).
B: Rickets in young children : bowed legs and deformity of the thorax and sternum (like "*pigeon chest*).
-C:Osteomalacia in adults softening of skeleton due to demineralization
-D: All the above.

8- Simple lipids are esters of fatty acids with fatty alcohol with example such as:
-A: Oils and butter.
-B: :Heparin, Oils
-C: Wax of honey bees.
-D: A & C

9-Some vitamins can be synthesized by intestinal bacteria such as:

Assiut University
Faculty of Science
Zoology Departmnt
Final Exam of first term 2024/2025

Second Level
First term
Time: two hours

Course title: Physiology1 (217Z)

Q1- Answer by √ or X for these sentences:- (20 Marks: one mark each)

1- Deficiency of vit. A leads to Inflammation of conjunctiva (Bitot's spot , white area in the conjunctiva of the eye).. ... .( )

2- Gastrin hormone secreted from duodenum, stimulates gastric juice secretion. .... ( )

3- Excess intake of vitamin D leads to the deposition of calcium salts in soft tissues such as kidney and ureter. ..... ()

4- Small intestine composed of three parts starting by duodenum followed by Jejunum and ileum and the third is the longest part, where absorption is carried out. .... ( )

5-Vitamin K is essential for synthesis and activation of blood clotting factors, and its deficiency leads to shortening clotting time. ... .( )

6- Vitamin B2 deficiency leads to inflammation of angles of mouth, scaled nose and vascularization of cornea and Photophobia. ... . ( )

7- In some, pathological cases, the body increase the dependence on body fat to produce energy leading to increases the level of keto bodies. ..... ( )

8- The renin enzyme has ability to digest and coagulate milk in stomach of children and small animals to give a time to complete digestion of milk protein (casein) by gastric pepsin enzyme . ...( )

9-Vitamin A participates in epithelial glycoprotein synthesis and this maintains the mucosa of urogenital tract, respiratory tract, gastrointestinal tract, the cornea and the skin. ....( )

10- Vitamin B_6 participates in epithelial glycoprotein synthesis and this maintains the mucosa of urogenital tract, respiratory tract, gastrointestinal tract, the cornea and the skin. .... ( )

11- The excess of cholesterol found in the bile, is transformed into cholate salts and is added to faeces. .... ( )

12- The rate of enzyme reaction is increased with the increase of substrate concentration till a certain point at which any increase in the substrate concentration will cause no further increase in the rate of enzyme reaction. ( )

13-Deamination means that amino group is transferred from one amino acid to keto acid forming a new type of non-essential amino acids. ....( )

14-Function of Vitamin B1 is to increase the activity of acetylcholine at nerve endings by stimulating acetylcholine esterase enzyme. ..... ( )

15- Copper deficiency decrease the immune power of the body and lowering of ceruloplasmin. ... .( )

16-The cortex of kidney contains all the renal corpuscles, proximal , distal convoluted tubules and parts of collecting tubules. ....( )

17- Vitamin C deficiency causes scurvy disease with easy bruising and haemorrhages under the skin due to increased capillary fragility. ..... ( )

18- liver cirrhosis can lead to prevention of storage of intrinsic factor secreted from gastric mucosa leading to inhibition of vitamin B12 absorbance ..... ( )

19- Both vitamins C B2 and E is powerful antioxidants in the body cells.... ( )

Q 6 : Put (√) for the correct sentences and (X) for the wrong one:(15 mark one for each point).

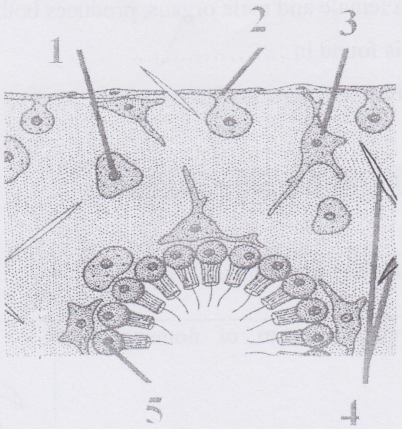
1. The free living platyhelminthes are Cestoda ( ).
2. *Planaria* lacks nervous system ( ).
3. Earthworm is placed in the group Oligochaeta ( ).
4. Whittaker classified living organisms into seven kingdoms ( )
5. Clitellum is absent in Polychaeta ( ).
6. Schizont stage of *Plasmodium* occurs in human liver cells ( ).
7. The egg is oval with lateral spine in *Schistosoma mansoni* ( ).
8. Phylum Cnidaria includes the organisms which are having tentacles surrounding the mouth. ( ).
9. Linnaeus evolved a system of nomenclature called Binomial ( ).
10. Anus is absent in Fasciola and Schistosoma ( ).
11. Pseudopodia in amoeba help in locomotion, engulfment, and ingestion. ( ).
12. Contractile vacuoles in protozoa serve the purpose of osmoregulation ( ).
13. Smallest taxon of classification is Kingdom ( ).
14. Infective stage of *Schistosoma* is ovum ( ).
15. Paramecium is characterized by the presence of Cilia ( ).

WITH MY BEST WISHES End

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

٤٣

Q4 :Write what the numbers indicate in the figure opposite (5 marks, marks one for each point).



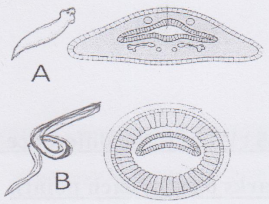
Q 5 : What is the difference between *Taenia solium* and *Taenia saginata*? (5 marks, marks one for each point).

1		
2		
3		
4		
5		

Q 2 : Complete (5 marks, marks one for each point).

1. Sponges belong to phylum .....
2. Flatworms, such as tapeworms, belong to which phylum .....
3. .....contains both female and male organs, produces both sperm & eggs.
4. Radial symmetry is found in .....
5. Cercaria stage of Fasciola hepatica leads to.....

Q 3 : Match (5 marks, marks one for each point).

1. Smallest taxon of classification is.....	a) Gastrovascular
2. Linnaeus evolved a system of nomenclature called.....	 b)
3. The cavity of cnidarians is called.....	c) Species
4. Polyp and Medusa forms present in.....	d) Binomial
5. Acoelomates and psudocoelomates.....	e) Cnidaria

7. ***Schistosoma* is a parasite found in:**

A. Blood B. Liver

C. Lungs D. Intestine

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

A. *Planaria* B. *Taenia*

C. *Fasciola* D. *Pheretima*

9. **Sponges are considered as**

A. filter feeding B. Sessile

C. both A&B D. Endoparasites

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

A. Pinocytes B. Choanocytes

C. Nematocytes D. Flame cells

11. **Monocystis belongs to the order of**

A. Gregarinida B. Coccidia

C. Microsporidia D. Sarcosporidia

12. **How do Cnidarians reproduce?**

A. Only sexually B. Only asexually

C. Both sexually and asexually D. By budding only

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

A. Earthworm B. Flatworms

C. Leeches D. Polychaetes

14. ***Hydra* sp. is characterized by:**

A. Sexual reproduction via gametes B. Nematoblasts

C. Mouth surrounded by 6-10 tentacles D. All

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

A. Pinocytes B. Nephridia

C. Choanocytes D. Nematocytes

Final Exam of invertbrates (I)

2024-2025

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 5 pages

Q 1: Choose the correct answer:(15 marks one for each point).

1. Which is not the characteristic of phylum protozoa?

A. Pseudopod
B. Binary fission
C. Contractile vacuole
D. Parapodia

2. *Fasciola gigantica* lives in:

A. Bile ducts of herbivorous animals
B. Blood of sheep
C. Intestine of sheep
D. Spleen of sheep

3. 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

4. Primitive nervous system is found in?

A. Protozoa
B. Cnidaria
C. Annelida
D. Echinodermata

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

A. Amoeba
B. Giardia
C. Plasmodium
D. Trypanosoma

6. Regeneration occurs in

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

السؤال الثاني: (25 درجة)

أولاً: وضح بالرسم فقط – بالبيانات الكاملة – ما يلي: (10 درجات)

1- معالجة الـ **mRNA** في حقيقيات النواة.

2- عمل الـ **Lac-Operon** في حالة وجود الجلوكوز فقط.

ثانياً: أذكر خمس أنزيمات تشترك في مضاعفة المادة الوراثية للبكتريا مع بيان وظيفة كل إنزيم. **(5 درجات)**

ثالثاً: أكتب تعريفاً مختصراً لما يلي: (10 درجات)

1- **Polymerase Chain Reaction**
2- **Semiconservative Model**
3- **Okazaki Fragments**
4- **Annealing Sequence**
5- **Transcription Factors**

انتهت الأسئلة، بالتوفيق

امضاء المراجع الداخلي

امضاء لجنة الممتحنين

-12	في نبات الدخان فان التزاوج بين افراد ذات التركيب الوراثي (S1S2 ذكر X S1S3 انثي) ينتج عنه التراكيب الوراثيه التاليه (S1S2, S2S3)
-13	صفه انتاج البيض هي احد الصفات المحدد بالجنس
-14	في حاله السياده المشتركه (Codominance) فان كل من الاليلين يعبر عن نفسه بدرجه متساويه في الفرد الخليط
-15	في حاله التفاعل الجيني قد يكون للصفه الواحده اكثر من طرازين مظهريين
-16	طراز توارث مجموعه الدم ABO يمكن ان يعتبر مثالا للاليلات المتعدده
-17	في الانسان من الممكن ان تتواجد اناث ذات تركيب وراثي 46, XY
-18	الصفات الهولاندريه هي صفات مرتبطه بكروسومات الجنس
-19	لون الفراء في الخنازير يعتبر مثال للنسبه 7:6:3
-20	القانون الثاني لمندل يدرس العلاقه بين الجينات المرتبطه
-21	في حاله الـ Duplicate dominant genes تظهر النسبه 9:3:4 في الجيل الثاني عند اجراء التلقيح الذاتي للافراد الخليطه
-22	لا توجد فئران حيه تركيبها الوراثي Yy بالنسبة للون الفراء الاصفر
-23	اناث حشره الجراد تنتج نوعين من الجاميطات مختلفين في اعداد الكروموسومات
-24	في حاله الجينات الغيرمرتبطه تكون نسبه التراكيب الجديده في النسل اكثر من 50%
-25	التلقيح الاختباري عند دراسه شكل الثمار في القرع يعطي نسبه 3:1

امضاء لجنة الممتحنين

امضاء المراجع الداخلي

امتحان التحريري - الفصل الدراسي الأول

للعام الجامعي 2024 – 2025 م

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

لجنة الممتحنين: ا.د/ محمد احمد الملقب بالخرشي د/ السيد عبد المنصف محمد

تاريخ الامتحان: / 1 / 2025

المراجع الداخلي:

ملحوظة الامتحان مكون من ثلاث ورقات

اجب عن جميع الاسئلة الاتية

السؤال الأول: ضع علامة (✓) او (✗) امام العبارات التالية بما يناسبها ثم قم بعمل جدول فى كراسه الإجابة يحتوي فقط على رقم الجملة والعلامة المناسبة لها: - (25 درجة)

-1	الافراد الـ Heterozygous لموقع معين تحتوي علي اليلين متماثلين لهذا الموقع
-2	يقصد بالـ Pleiotropism ان الصفه الواحده تتأثرفي ظهورها بأكثر من جين واحد
-3	بعض الجينات مثل DAX1, SRY and DMRT1 يتأثر تعبيرها بدرجات حراره البيئه
-4	الفرد ذو التركيب الوراثي AABbCCDdee يعطي عدد 8 من انواع الجاميطات
-5	اذا كان بعض افراد نسل التلقيح الاختباري للفرد المختبر يحمل الصفه السائده دل ذلك ان الفرد المختبر اصيل
-6	تظهر النسبه 9:7 في حاله الجينات المكمله
-7	يؤدي الارتباط التام الي عدم تكوين تراكيب وراثيه جديده
-8	عند اجراء التجارب الخاصه بتحديد المسافه بين الجينات فانه يمكن معرفه المسافه بين اي موقعين وراثيين من خلال معرفه العدد الكلي للنسل وعدد الافراد الحامله للتراكيب الابويه
-9	الصفات المتأثره بالجنس تخضع لتأثير الهرمونات
-10	يقصد بالتفاعل الجيني ان العديد من الجينات تتفاعل معا لاظهار صفه واحده
-11	التلقيح الذاتي للافراد AACCBb يعطي نسبه 50% من التراكيب الوراثيه الجديده في النسل

امضاء لجنة الممتحنين امضاء المراجع الداخلي

2- Structure and function of antenna

3- The leg pretarsus.

4- The wing venation.

5- The appendicular ovipositor.

6- Four major feeding specialization can be identified depending on the food type.

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2. Ecdysone hormone.

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3. Air sacs.

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4. Malpighian tubules.

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5. The tentorium.

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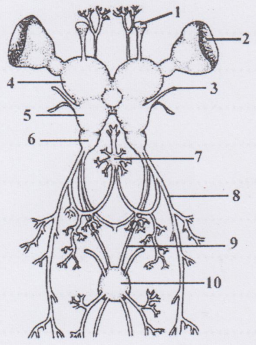
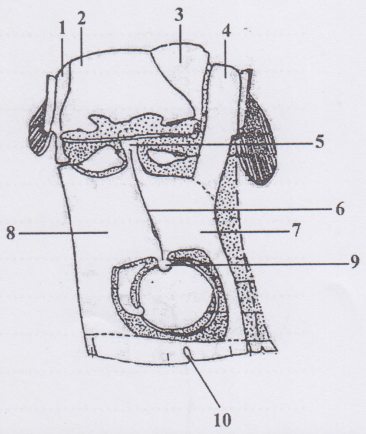
Fifth Question: Define and labeling the following diagram. (10 marks)





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

1- Segmentation of head.

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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 conduct signals away from 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 direction. ( )
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. Some insects with haustellate mouthparts feed on solid and semisolid diet. ( )
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 secondary condition. ( )
10. The Epistomal 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. Rows of hairs on the inner side of the first tarsomere in honeybee to scrape pollen off the abdomen. (.....)
5. A thin reinforcing "wire" of cuticle winds spirally through the membranous wall of trachea vestibule to prevent its collapse under pressure. (.....)
6. The second section of the alimentary canal. (.....)
7. The major structural component of an insect's circulatory system. (.....)
8. The structure that separates the pericardial sinus from the perivisceral sinus. (.....)
9. The angle of wing which lies between costal and anal margin. (..... .....)
10. It considers the foot of insect leg. (.....)

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

1. The circulatory system.

Assiut University
Faculty of Science
Zoology & Entomology
Department

First semester General Entomology Exam
(20 – 1 – 2025)

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 Tritocerebrum usually innervate?
   a) Labrum b) labium c) Compound eyes d) Antannae
2. What is the name of valves in dorsal vessel that, ensure one way flow of hemolymph?
   a) Tracheoles b) Ostia c) Spiracles d) Gonopore
3. How many pairs of ganglia have fused together to form the suboesophageal ganglion?
   a) Two b) Three c) Four d) Six
4. List the stages of the incomplete metamorphosis life cycle in the correct order?
   a) Egg-pupa-larva-adult b) Egg-larva-pupa-adult
   Egg -numph-pupa-adult d) Egg-numph-adult
5. Gastric caeca are 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 glands secrete the JH?
   a) NSC b) CC c) CA d) PTG
8. On which suture the posterior tentorial pits found?
   a) Epistomal b) Frontoclypial c) Occipital d) Postoccipital
9. Which of the following is the lateral sclerite of each insect body segment?
   a) Sternum b) Notum c) Tergum d) Pleuron
10. Which is of the following order lack the Malpighian tubule musculature system?
    a) Collembola b) Hemiptera c) Aphididae 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 mayfly larvae get air under water through.....
    a) Biological gills b) Air bubbles c) Plastrons d) Siphon
13. Where is the digestion and absorption take place?

University: Asyut | Invertebrate I | Total degree = 50
Faculty: Science | Code: 220 Z | Final exam.
Department: Zoology | Jan. 2025 | Time: 2 hrs.

The questions are in 2 pages

Q1. Choose between brackets: (18 marks)

1- (Annelids - Platyhelminthes - Both) have/has hydrostatic skeleton.

2- The infective stage in *Heterophyes* is (cercaria- merozoite – no correct answer).

3- In *Taenia* (cuticle - chitin - tegument) covers the body surface.

4- Excretion in Nematoda occurs by (renettes- flame cells - nephridia).

5- Intermediate host in *schistosoma japonicum* is (*Oncomelania – Bulinus - Biomphlaria*).

6- In some nematodes (hypobiosis – torsion – parthenogenesis) helps the larva to withstand adverse environmental conditions.

7- *Trichinella spiralis* belongs to (Nematoda - Trematoda - Cnidaria).

8- Elephantitis could be carried by (mosquitoes – snails – fish).

9- Sexually immature polychaetes are called (atokes – epitokes - miracidia).

10- Sclerocytes secrete (spicules – sponging fibrous- collagen fibers).

11- Hyalospongiae consist of (four – five - six) rays of spicules.

12- The insect vector of trypanosome is (*Anopheles* - *Plasmodium vivax* - tse tse fly).

13- The infective stage in *Plasmodium* is (schizont – sporozoite - merozoit).

14- Placozoa moves in water by (flagellum - pseudopodia - cilia).

15- Larva of Aurelia is called (planula – trochophore - Cydippid larva).

16- Comb jellies have eight rows of (tentacles – comb like paddles - eyes).

17- Rhombozoans live in (liver- kidney - brain) of cephalopods.

18- (Interstitial – Nematoblast- Musculo epithelial) cells are responsible for producing gametes in *Hydra*.

Q2. Answer five only of the following: (20 marks)

1- Differentiate various classes of Annelida, giving an example for each.

2- List the main characteristics of Nematoda.

تابع باقى الأسئلة بالخلف