



Zoology Department



قسم علم الحيوان

Final Exam: Anatomy (242Z)

2017-05-24

**Time: Two Hours
Second Semester**

Question one:

(10 degrees)

Complete the following:

- 1-The typical of Pterygote insects is a strong biting jaw hinged to the head by anterior and posterior articulations.
- 2-The usual appendages of insects head include a pair of,,, the and.....
- 3-A transverse movement of the mandible of Pterygote insects produced by and muscles, arising from the dorsal wall of the cranium.
- 4-Each antenna is moved as a whole by muscles inserted on the base of the
- 5-..... articulates with the lower lateral margin of the tergal region of the cranium.

Question two:

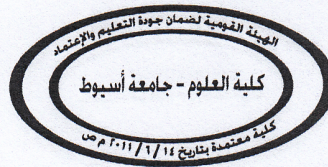
(14 degrees)

Give the scientific names of the following :

- 1 - A median ventral plate of the head of some insects, developed as a sclerotization of the gular region of the neck proximal to the posterior tentorial pits, continuous with the basal plate of the labium.
- 2-The posterior median appendage of the insect head formed by the union of the second maxillae.
- 3-The sclerites of the neck, particularly one or two pairs of lateral neck plates(Kehlplatten) joining the head to the prothoracic episterna.
- 4- The principal area of the sternum anterior to the roots of the sternal apophyses or the sternacostal suture. (Sternannum).
- 5- The sclerites of the neck, particularly one or two pairs of lateral neck plates (Kehlplatten) joining the head to the prothoracic episterna.
- 6- The tergum, or particularly the tergum of a thoracic segment.
- 7- Tergosternal Muscles. Generally large muscles of the pterothorax in flying insects.



Zoology Department



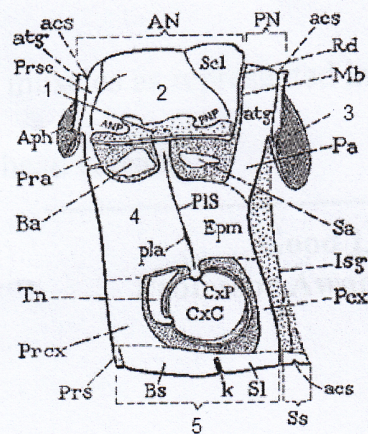
قسم علم الحيوان

Question three:

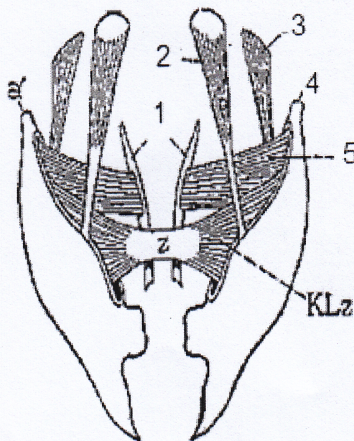
(15 degrees)

Write down the name of the three diagrams and all the missing labels:

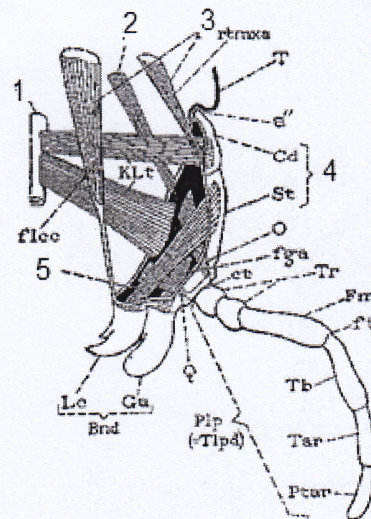
1-



2-

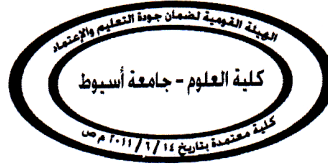


3-





Zoology Department



قسم علم الحيوان

٢

Question four:

(11 degrees)

Mention in brief:

- 1- The usual thoracic muscles as represented in an a late segment with their origin and insertion. (6 degrees)
- 2- The sutures of the head capsule. (5 degrees)

Good Luck
Professor Awad Azza



Faculty of Science



Assiut University

Dept. of Zoology

Exam of Animal Ecology Code No. 225Z

Credit hour system 2nd level. Year 2016-2017

Answer the following questions:

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

1-The decomposers	Includes water, soil and air..... ().
2-The ecosystems	Constitute the base of the food pyramid ().
3- Competition	Feed on 1 ^{ry} consumers().
4- Climax communities	Are those which become active during night..... ().
5- Homeostasis	It is one of the requirements for a stable ecosystem... ().
6-Biomes	It is considered one of the abiotic factors..... ().
7-Monogamy	Plays an important role in the water cycle.....().
8-Transpiration	Depend on internal heat production..... ().
9-Homeotherms	The formation of a pair bond between one male and one female..... ().
10- Biosphere	Is the division of the earth into regions by climate ().
11-Producers	are the end of succession..... ().
12-Secondary consumers	The maintenance of conditions within the range that the organism can tolerate. ().
13-Recycling of materials	Is the struggle between species..... ()
14-Nocturnal animals	Tend to change over a long period of time..... ()
15- Types of substrate	Play a good rule in recycling of materials..... ()

B- Write the scientific term of the following: (5 marks)

Write the scientific Term of the following (10 Marks)

- 1- The maximum rate at which a population can increase under ideal conditions.
- 2- The highest population that can be maintained for an indefinite period of time by a particular environment.
- 3- The struggle between the individuals of the same species.
- 4- The role played by the organism.
- 5- An area defended by an organism not shared by another.
- 6- A type of reproduction in which the ova must be fertilized to start development.

- 7- A class of organisms found on the base of the food pyramid.
- 8- The biome in which Egypt is found.
- 9- Using a population to control another.
- 10- A kind of distribution found in social insects.

C- Write the missing word or words in the following: (5 marks)

- 1- The class of organisms found on the top of food pyramid are known as
- 2-..... is the primary site of energy fixation in the forest.
- 3-is the site where decomposition takes place in the forest.
- 4-.....is a situation in which an animal defends an exclusive area not shared with rivals.
- 5-.....is killing and eating an individual of the same species.
- 6-.....occurs among individuals of the same species for environmental resources.
- 7-occurs among two populations for environmental resources.
- 8-is the eating of one living organism by another.
- 9-..... takes place when some individuals claim enough resources while denying others a share.
- 10-.....can occur between two or more species although it reduces the fitness of all parties.

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

- 1-Saprophytes include (Fungi-Bacteria- mushrooms-all).
- 2-Carnivores include (Predators-Scavengers- all).
- 3-Light affects (the color of animals- morphology-both).
- 4-Eutherms are (widely distributed-restricted in their distribution-both).
- 5- The temperature affects (the physiology of animals- life cycles of animals-both).
- 6-The maximum rate at which a population can increase under ideal conditions is known as (biotic potential- biotic potential- biotic potential).
- 7-A few numbers of young is characteristic of (short lived animals – long lived animals – both).
- 8- The organisms that break down wastes and dead organisms 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)

٢
E- Answer four only of the following: (20 marks)

- 1- *Apply your knowledge to analyze some of the negative impacts of man which you may find in the river Nile.*
 - 2- Analyze the effects of thermal pollution on animals.
 - 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 camels modify toward Moisture (mention 3 modifications).
-

Good Luck



Answer the following questions:-

I-Complete the following:

(10 Marks)

- 1- Light production in fishes usually takes place in special organs called
- 2- and of pigments in chromatophores are under and control.
- 3- Long –term changes due to increase or decrease in number of chromatophores called.....
- 4- Grinding,..... and together are the most common type of among fishes.
- 5- Electric organs of fishes are made up of specialized cells called..... that have evolved from.....
- 6- Generally, electric fishes are..... or live in of low visibility.
- 7- Reproductive readiness in fishes achieved by and
- 8- Transition into the migratory state is related to ,.....,..... and
- 9- Fish plankton feeders may be and
- 10-The cycles of migration includes..... and
- 11-Factors affecting food and feeding habits are ,..... ,..... and
- 12-Body form in fishes takes different shapes ,..... ,..... ,..... and.....

II- Define the following:

(10 Marks)

Oviviparous fishes – Mouth brooders- Interoparity –Stenohaline fishes- Buoyant eggs – Anadromous migration – Growth in fishes- Osmoconformers- Osmoregulators- Demersal coloration

III- Explain Two of the following :

(10 Marks)

- (a)Methods of growth measurements in fishes.
- (b)Classification of fishes according to their food and feeding habits.
- (c) Catadromous migration.

IV- Discuss One of the following:

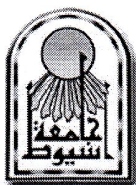
(10 Marks)

- (a) Osmoregulation in marine and freshwater fishes (by drawing only)**
- (b) Spawning behavior of oviparous fishes.**

V- Write on coloration and its function in fishes.

(10 Marks)

Best wishes Prof.Dr. Usama Mahmoud



Answer the following questions:-

I-Complete the following:

(10 Marks)

- 1- The monk has two important functions
.....
- 2- A well constructed water inlet must fullfil the following conditions
.....
.....
.....
- 3- The best general water inlet is the one known as inlet with
and with
- 4- The principal points which must be considered when constructing a pond
are
.....
.....
.....
.....
.....
.....
- 5- According to their water supply ponds are divided into
.....
.....
.....
- 6- Some authors have suggested that the appearance of the
.....
.....
.....
..... can be related to egg quality.

II- Define the following:

(8 Marks)

Monk – Sluice – general water inlet- Individual water inlet –
Cryopreservation- Egg quality – overripening of eggs- period of
optimum ripeness.

III- Explain the requisite conditions for fish suitable for fish culture.(10 Mark)

V- Write on:

(12 Marks)

- a- Hypophysation.**
- b- Factors influencing fecundity and egg size.**
- c- Determinants of egg quality.**

IV- By drawing only display the principal arrangements of ponds.(10Marks)

Best Wishes Prof.Dr.Usama M. Mahmoud



Answer the following questions (50 marks)

(Note: The exam in FIVE pages)

First Question: Choose the best answer (20 marks)

1.are the most dominant insects in the world.
a) Wasps b) Flies c) Ants d) Beetles
2. The insect hemolymph transport wastes, nutrients, hormones and oxygen to all insect cells.
a) True b) False
3. The deutocerebrum innervates the:
a) Antennae b) Compound eyes c) Mouthparts d) Labrum
4. The mouthpart that functions as the insect tongue is the:
a) Epipharynx b) Hypopharynx c) Maxillary palp d) Labial palp
5. This type of leg is modified for digging:
a) Natatorial b) Fossorial c) Cursorial d) Saltatorial
6. Which part of the insect digestive system is used to store honey?
a) Rectum b) Gastric caeca c) Gizzard d) Crop
7. This structure is used to store male gametes deposited in the female reproductive system:
a) Gonophore b) Spermatheca c) Vitellarium d) Spermatophore
8. Bees, wasps and white ants (termites) are belonging to order Hymenoptera.
a) True b) False
9. A line of weakness between adjacent sclerites that breaks during molting is called:
a) Apodeme b) Ecdysial suture c) Epistomal suture d) Fronto-clypeal suture
10. Which of the following have mandibles and maxillae that have been modified to sharp stylets?
a) Locusts b) Butterflies c) Mosquitoes d) Houseflies
11. Both male and female wasp bear stinger for defense.
a) True b) False
12. Which insect goes through incomplete metamorphosis?
a) Bee b) Ant c) Butterfly d) Locust

13. The cerci in cockroaches are

- a) Short and segmented
- b) Short and unsegmented
- c) Long and segmented
- d) Long and unsegmented

14. An insect always has:

- a) One pair of wings
- b) Two pairs of cerci
- c) One pair of antennae
- d) Two pairs of compound eyes

15. In insects the nitrogenous compounds are secreted in the form of

- a) Amino acids
- b) Uric acid
- c) Ammonia
- d) Urea

16. Which sclerites are below the epistomal suture?

- a) Frons
- b) Clypeus
- c) Gena
- d) Labrum

17. Pterothorax bears:

- a) Wings only
- b) Legs only
- c) Wings and legs
- d) Spiracles only

18. When the mouth parts are pointed forward the insect head is called:

- a) Prognathous
- b) Hypognathous
- c) Opisthognathous
- d) All

19. The insect communicates to.....

- a) Find food
- b) Find mate
- c) Defend nest
- d) All

20. The dorsal sclerite of the prothorax is called:

- a) Mesonotum
- b) Pronotum
- c) Sternum
- d) Pleuron

Second Question: Complete the following sentences (10 marks)

1. In Hymenoptera the 1st abdominal segment is fused with 3rd thoracic segment to form.....while in Diptera the 2nd pair of wings is modified into
2. Chemically, the insect epicuticle is composed of.....,.....and.....While the procuticle consists ofand.....
3. Gas exchange in aquatic insects occurs by,....., and.....
4. The dorsal blood vessel is divided into anterior part called.....and a posterior part known as.....
5. The surface of insect head is divided into regions (sclerites) by a pattern of shallow grooves called.....
6. The 11th abdominal segment usually bears paired appendages called.....

7. Which abdominal segments are used for reproduction in males? In females?
Males.....Females.....
8. The changing in body form through development is known as.....
9. The science of studying insects is known as.....
10. The side segment of insect thorax is called pleuron and is divided by the pleural suture into at least two sclerites; an anterior and a posterior

Third Question: Write the functions of FIVE only of the following: (10marks)

- a) Insect exoskeleton: 1)
2)
3)
4).....
- b) Insect antennae: 1)
2)
3)
4).....
- c) Air sacs: 1)
2)
3)
4).....
- d) Benefits of insects 1)
2)
3)
4).....

e) Malpighian tubules and cerci: 1)

2)

3)

4).....

f) Insect digestive system: 1)

2)

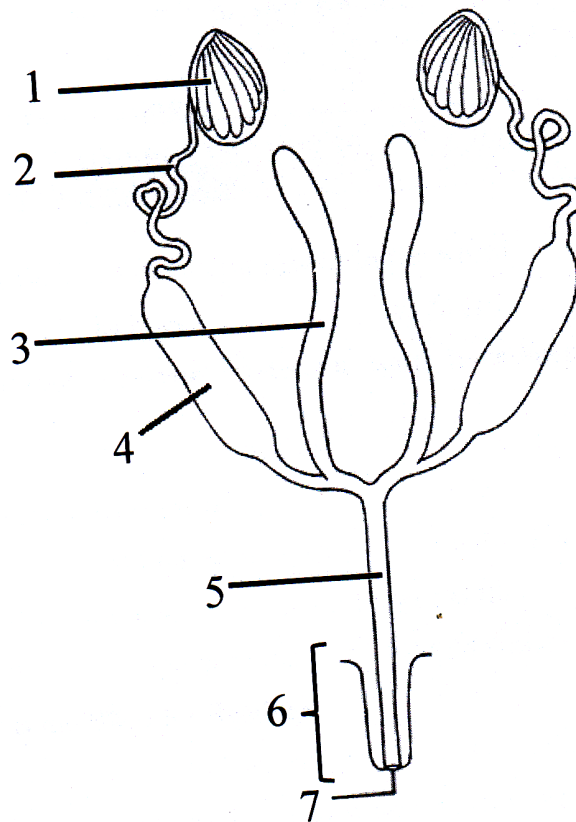
3)

4).....

Fourth Question: (A) Compare between each pair of the following: (6 marks)

I	Complete metamorphosis	Incomplete metamorphosis
1-		
2-		
II	Lepidoptera	Orthoptera
1-		
2-		
3-		
III	Pheromones	Allomones

Question Four: (B) Identify and complete the labels of the following structure (4 marks)



This structure represents.....

Write the function (s) of no.3:.....

.....

End of the Questions

With my best wishes

By Dr. Ali Mohamed Ali



Zoology Department

قسم علم الحيوان

Final Exam: General Zoology (100 Z)
Credit Hour System 2016/2017

Time: Two Hours
Second Semester

Answer the following questions (50 marks)

I: Choose the best single correct answer (10 marks)

1. Sarcolemma is the cell membrane of
a) Nerve cell b) Epithelial cell c) Muscle cell
2. How many divisions are required to go from a zygote to 64 cell embryo stage?
a) 2 b) 4 c) 5 d) 6
3. Dwarfism is a disorder results from
a) Deficiency of GH before adulthood b) Reduced blood glucose level
c) Excess PTH activity d) Excess ACTH activity
4. Insulin is secreted byof the pancreas.
a) Alpha cells b) Delta cells c) Beta cells
5. During Spermatogenesis occurs in multiplication phase.
a) Mitotic cell division b) Meiotic cell division c) both a and b
6. Goblet cells are best described as
a) Unicellular endocrine gland b) Multicellular exocrine gland
c) Unicellular exocrine gland d) Multicellular endocrine gland
7. Which of the following is surrounded by two membranes?
a) Mitochondrion b) Cell membrane c) Nucleolus d) All are true
8. Binary fission is a type of.....
a) Sexual reproduction in *Amoeba* b) Sexual reproduction in *Trypanosoma*
c) Asexual reproduction in *Amoeba* d) None of them
9. muscles are multinucleated.
a) Skeletal b) Smooth c) Cardiac d) Involuntary

10. Chondrocytes are present in.....
- a) Bone b) Hyaline cartilage c) Mesenchyme d) Adipose tissue
11. Which one of the following tissues is designed to stretch?
- a) Stratified b) Squamous c) Transitional d) Epithelial
12. Melatonin is secreted by
- a) Thyroid gland b) Adrenal cortex c) Adrenal medulla d) Pineal gland
13. tissue transmits electrical signals.
- a) Muscle b) Epithelial c) Connective d) Nervous
14. is a process by which cells release their contents to outside of the cell.
- a) Phagocytosis b) Pinocytosis c) Endocytosis d) Exocytosis
15. is a type of fibers that made of elastin.
- a) Yellow b) Collagen c) Reticular d) White
16. Which of the following digest the dead and old organelles in the cell?
- a) Lysosome b) Ribosomes c) Golgi complex d) Mitochondria
17. One of the following is a mixed gland
- a) Pituitary b) Thyroid c) Adrenal d) Pancreas
18. The scientist Ray defined the
- a) Binomial nomenclature b) Taxonomic ranks c) Species d) Family
19. Polyp and medusa are forms of
- a) Poriferans b) Cnidarians c) Protozoans d) Nematodes
20. Which one of the following terms from simple to most complex is correct?
- a) Organelles, cells, tissues, organs, organism
- b) Cells, organelles, organs, tissues, organism
- c) Tissues, cells, organelles, organs, organism
- d) Organs, cells, organelles, tissues, organism

II: (A) Complete the following table (6 marks)

	Platyhelminthes	Nematoda	Annelida
Digestive system			
Body cavity (draw)			
Body shape			
Excretory system			

II: (B) Define the following terms (7 marks)

1- Cleavage

.....

2- Homeostasis

.....

3- Species

.....

4- Endocrine glands

.....

5- Embryology

.....
.....

6- Active transport

.....
.....

7- Cytology

.....
.....

III: Answer the following (15 marks)

1- List the origin of animal tissues from embryonic layers (ectoderm, endoderm and mesoderm)

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

2- Write short notes on locations and functions of simple squamous epithelium

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

3- List THREE differences between prokaryotic and eukaryotic cells

.....

.....

.....

.....

.....

.....

.....

4- Give short notes on hormones of adrenal gland

a) Cortex hormones:

.....

.....

.....

.....

.....

b) Medulla hormones:

.....

.....

.....

.....

.....

5- General characteristics of phylum Chordata:

.....

.....

.....

.....

.....

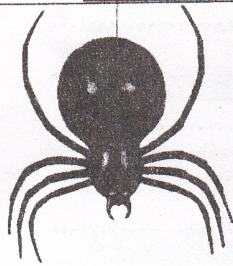
.....

.....

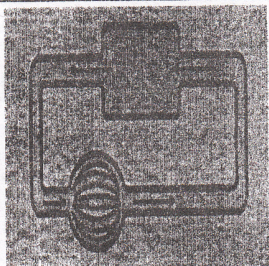
.....

V: Answer the following

(12 marks)



(1)



(2)

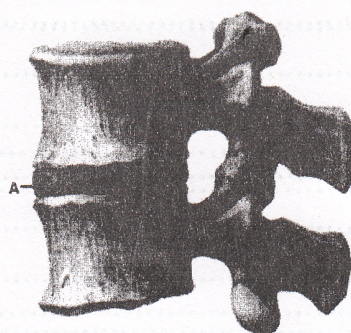
(A) (1) Type of symmetry:.....

Identify sample Phylum:.....

(2) Type of circulatory system

- This type of circulatory system is present in

Phylum.....

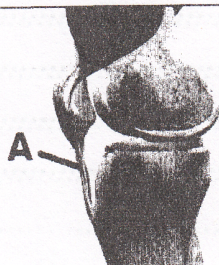


(B)

(A) Identify the C.T.....

Description.....

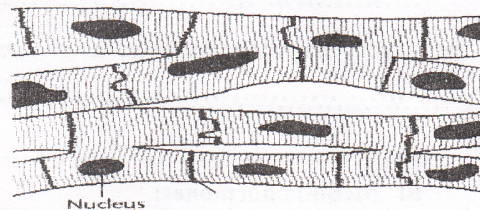
Location.....



(C) Identify the arrow part A.....

Description.....

Location.....



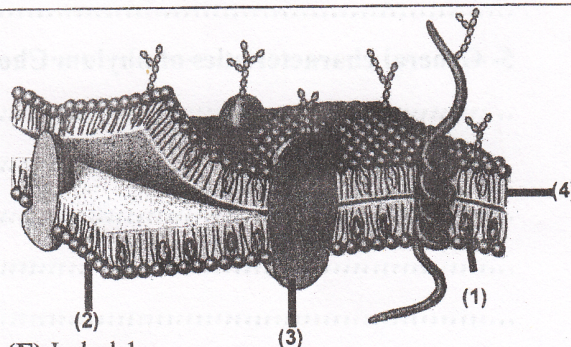
(D) Identify muscle tissue.....

Location.....



(E) a) The diagram refers to a disease called.....

b) This disease is caused by.....



(F) Label 1.....

Label 2.....

Label 3.....

Label 4.....

With our best wishes



Final Exam of Histology & Histopathology (212Z)
for second year Students (credit hours)
Part I – Histology

1-Choose the most appropriate answer for each of the following statements: (10 Marks)

- 1- What do you call the simple squamous epithelium that lines the abdominal cavity?
a. Epithelioid tissue b. Mesothelium c. Endothelium
d. Transitional e. Pseudostratified
- 2- Which if the following is highly vascularized?
a. Cartilage b. Simple epithelium
c. Stratified epithelium d. Areolar connective tissue
- 3- What type of adipose tissue tends to increase as human age?
a. Multi locular adipose tissue b. White adipose tissue c. Uniocular adipose tissue
d. Brown adipose tissue e. Both b and c
- 4- According to the mode of secretion (changes in the secretory cells), glands are classified into:
a- Exocrine and endocrine b- Merocrine, apocrine and holocrine
c- Unicellular and multicellular
- 5- What do you call the space where a chondrocyte sits (exists) in?
a. Space of Disse b. Space of Mall c. Vacuole d. Lacuna
- 6- Which of the following is composed of smooth muscle?
a. Upper esophagus b. Heart c. Tongue
d. Biceps muscle e. Walls of the visceral organs
- 7- What is the line that bisects the dark band in a muscle?
a. A band b. I band c. Z line d. H band
- 8- Which cell is a macrophage found in the central nervous system?
a- Kupffer cells b- Histiocytes c- Dust cells
d- Langerhans cells e- Microglia (misoglia)
- 9- Which of the following is forming a myelin in the peripheral nervous system?
a. Schwan cell b. Basket cell c. Ganglion
d. Neuroglia e. Satellite cell
- 10- Which of the following is a supporting cell found in the ganglia?
a. Schwan cell b. Basket cell c. Ganglion
d. Neuroglia e. Satellite cell

II- Complete the followings:

(10 Marks)

- 1- Epithelial tissues are derived from ,
and
- 2- Epithelial cells specialized for sensory reception are called
epithelium while these forming secretory units constitute
epithelium.
- 3- The tubular glands are classified into ,
..... and
- 4- In a neuron, the rough endoplasmic reticulum is termed
- 5- The types of connective tissue proper are:
a. c. e.
b. d. f.
- 6- Naked nerve fiber means
- 7- The bone cells are , ,
- 8- Osteoclast cells are formed by fusion of

III. Answer only ONE of the followings with drawings

(5 Marks)

1. Differences between skeletal and cardiac muscles
2. Differences between spinal and sympathetic ganglion

Part II- Histopathology

IV. Choose the correct statement from column B that matches the terms in column A and write your answer in the table below. (15 Marks)

A		B									
1. Pyknosis		1. Pathological accumulation of excess neutral fat in parenchymatous cells.									
2. Cloudy swelling		2. The causes of any disease.									
3. Etiology		3. Characterized by excess water accumulation inside the cells forming vacuoles in the cytoplasm.									
4. Involution		4. A local death of cells or tissues within living body caused by severe physical and chemical insult.									
5. Karyolysis		5. Characterized by swelling of the cell and granularity of the cytoplasm									
6. Haemorrhage		6. In which the nucleus shrinks, its chromatin becomes dense and it stain darkly.									
7. Fatty changes		7. Escape of blood outside the blood vessels.									
8. Hydropic degeneration		8. The nucleus appears to dissolve and fails to take the stain due to chromatic hydrolysis.									
9. Necrosis		9. Increase in the size of the cells.									
10. Hypertrophy		10. Decrease in the number of cells.									
Column A	1	2	3	4	5	6	7	8	9	10	
Column B											

V. Complete the following statements:

(10 Marks).

1. Inflammation is defined as (2)

.....

2. Repair is defined as (2)

3. Causes of necrosis are: (3)

a.

b.

c.

4. Types of inflammation include: : (3)

a.

b.

c.

Best wishes

Name of the examiner: Prof. Bothaina M. Khidr



University: Asyut

Invertebrate II

Total degree = 50

Faculty: Science

Code: 222 Z

Final exam.

Department: Zoology

June 2017

Time: 2 hrs.

The questions are in 2 pages

Q1. Give the term indicative to the following:

(14 marks)

- 1- A place in which *Octopus*' fertilization occurs.
- 2- Unique system of hydraulic canals performs several functions.
- 3- Functional regions are formed by fusion of groups of segments.
- 4- Blind tubes extend into hemocoel and empty uric acid into gut.
- 5- A system is of the same design in Arthropoda as the Annelida.
- 6- Secondary gills have functional nematocysts at the tips.
- 7- Crustaceans with brood pouch to incubate the embryos.
- 8- It feeds by trapping plankton in a transparent mucous web suspended above it.
- 9- Unattached bivalves on the substrate which are capable of limited locomotion by clapping.
- 10- Fast swimmers mollusks which use jet propulsion.
- 11- A deuterostome lacks arms and eviscerates to avoid predation.
- 12- Detritivorous horseshoe shrimps having eggs & sperm through the same duct.
- 13- Marine, benthic chelicerates with long legs, small body & large proboscis.
- 14-- Spiral winding of the shell in late developmental stages & doesn't affect the symmetry.

Look behind please!

Q2. Answer six only of the following:

(24 marks)

- 1- Distinguish between scorpions & pseudoscorpions.
- 2- Explain structure & function of spiders' silk.
- 3- Demonstrate with drawings respiration in both *Buthus* & *Eremina*.
- 4- Classify Class Siphonopoda and give an example for each.
- 5- Compare only by drawing with labeling digestive system in both *Tripneustes* & *Penaeus*.
- 6- Illustrate the structure & function of gills in *Unio*.
- 7- Only draw with labeling the circulatory system in both *Scolopendra* & *Anodonta*.

Q3: Give the reason (s):

(12 marks)

- 1- Remipedes belongs to Crustacea.
- 2- Presence of a siphon on the stomach of *Tripneustes*.
- 3- Brittle stars can't use tube feet in locomotion.
- 4- Horseshoe crabs' blood is important medically.
- 5- *Peripatus* is similar to Arthropoda.
- 6- Cryptobiosis "tun" state can return to life from zero metabolism.
- 7- Tardigrada is similar to Annelida.
- 8- Hermit crabs hide in an empty shell.
- 9- Although the hard exoskeleton, arthropods move efficiently and quickly.
- 10- The visceral mass of *Conus* lost its symmetry.
- 11- *Sacculina* is a parasitic cirripede.
- 12- Onychophorans are similar to arthropods.

----- End -----

هناء عاطف جودة

Best wishes



Assiut University
Faculty of Science
Zoology Department
25/5/2017



Third level year Exam (Zoology)
Course name: Vertebrate 1
Course code: (232-Z)
Time: 2 hours

First question: Choose the correct answer of the following.

(20 marks)

- 1) In chordates, the blood flows within dorsal aorta
 - a. From anterior to posterior
 - b. From posterior to anterior
 - c. From ventral to dorsal
- 2) In Agnathan, Sclera layer is formed of
 - a. Bone
 - b. Fibrous connective tissue
 - c. Cartilage
- 3) The lateral line system is present within the skin of
 - a. Cyclostomes and aquatic vertebrates
 - b. Cyclostomes
 - c. Terrestrial vertebrates
- 4) Paired fins appear in
 - a. Amphioxus
 - b. Cartilaginous fish
 - c. Lamprey
- 5) Pharyngeal slits arein embryo of vertebrates
 - a. Function
 - b. Disappear
 - c. Unfunction

6) Pineal complex arises from

- a. Epithalamus
- b. Diencephalon
- c. Hypothalamus

7) Which of following appear in amphibian

- a. Truncus arteriosus
- b. Bulbus arteriosus
- c. Conus arteriosus

8) Lateral ventricle is occupied

- a. Cerebral hemisphere
- b. Diencephalon
- c. Hind brain

9) Round lens appear in

- a. Amphibian and Fish only
- b. Lamprey and Fish only
- c. Lamprey, Fish and Amphibian

10) In agnathan, two olfactory sac appear

- a. In adult
- b. In larva
- c. Non of above

11) In lamprey, the pancreas is embedding within

- a. Liver
- b. Anterior portion of intestine
- c. (a & b)

12) In Amphioxus, The circulatory system have

- a. Renal portal system
- b. Hepatic portal system

c. No portal system

13) The nervous system arises embryonically from

a. Mesoderm layer

b. Endoderm layer

c. Ectoderm layer

14) The horny scales appear as exoskeleton structure in

a. Amphioxus

b. Chondrichthyes

c. Lamprey

15) In Amphibians, the middle ear consists of

a. One bone

b. Two bones

c. Three bones

16)is involved in hearing

a. Sacculous

b. Legana

c. Semicircular canal

17) In Gnathostomes, The cerebellum is

a. Reduced

b. Well-developed

c. Disappear

18)is a photoreceptor cell sensitive for low level of light

a. Cone

b. Rod

c. Fovea

- 19)is a system detects the water current in ,.....
- Vestibular apparatus, in aquatic vertebrates
 - Lateral line system in terrestrial vertebrates
 - Lateral line system in Lamprey
- 20) In, the epiphysis is prominent but the parietal eye is rudimentary
- Cartilaginous fish only
 - Cartilaginous and bony fish only
 - Amphibian

Q2: Complete the following sentences (10 marks):

- Spinal nerves of amphioxus consists of and
- In chondrichthyes, the splanchnocranium is composed ofviscera arch from which thegive rise the upper jaw
- Notochord arises embryonically fromwhich extendas support rod and is known asorgan
- Urochordates are characterized by the notochord extend.....,while in vertebrates
- In Fish, Brain and spinal cord is wrapped bymeninx, while in amphibian, wrapped by.....
- Exoskeleton is a.....like.....in agnathan which are restricted within

- 7) The chondrichthyes havefins , and the tail is.....type
- 8) Skin of agnathan provides withwhich acts as.....
- 9) Hemichordates is considered as.....due to the absence.....
- 10) The pharyngeal bar of amphioxus is supported bywhich consists ofconnective tissue.

Q3: Which of the following is true; if false writ the correct sentence? (10 marks)

- 1) Seven branchial arches support the gill bar of Lamprey
- 2) Columella arises from the mandibular arch in lamprey
- 3) The jaw suspension is hyostylic type in amphibian
- 4) In cartilaginous fish, the second gill is reduced and is known as spiracle
- 5) Conus arteriosus is anterior chamber of heart which is composed of cardiac muscle.
- 6) Iris controls visual accommodation
- 7) In Amphioxus, the sinus venosus is considered as anterior chamber of heart
- 8) Myotomes of agnathes have V-shaped

- 9) In adult lamprey the right Cuvier duct is disappear ,
- 10) Inferior jugular vein appears in venous system of amphioxus.

Q4: Draw just four items of the following (10 marks)

- A. The structure of heart of Fish and Amphibian
- B. Pentadactylous limb
- C. The nervous system of amphioxus and petromyzon.
- D. The structure of eye of vertebrate and pineal eye.
- E. The aortic arch of amphibian.

	امتحان الفصل الدراسي الثاني لطلاب كلية العلوم للعام الجامعي 2016-2017	
القسم الذي يقدم المقرر: الوراثة اسم المادة: (215 ز) أساسيات الوراثة لجنة الممتحنين: د/ عبد اللطيف هشام عبد اللطيف		
الفرقة: المستوى الثاني (ساعات معتمدة) الزمن: ساعتان د/ بهاء الدين السيد عبد الفتاح		
تعليمات الامتحان 1- يتكون الامتحان من أربعة أسئلة 2- يتكون الامتحان من صفحتين 3- فكر جيدا قبل ان تجيب عن الاسئلة، ولا تجعل قلمك يسبق فكرك 4- الدرجة الكلية للامتحان (50 درجة)		

اجب عن جميع الاسئلة الآتية

السؤال الاول:- (15 درجة)

(أ) - في التلقيح الإختباري التالي لإناث حشرة الدروسوفيلا الخليطة في ثلاث مواقع كان النسل الناتج كالتالي (8 درجات)

$$\begin{array}{ccc}
 A & B & C \\
 \hline
 a & b & c
 \end{array}
 \times
 \begin{array}{ccc}
 a & b & c \\
 \hline
 a & b & c
 \end{array}$$

A	B	C	340
a	b	c	316
A	b	c	135
a	B	C	118
A	B	c	48
a	b	C	30
A	b	C	8
a	B	c	5
المجموع الكلي			1000

المطلوب :-

- 1- حساب المسافة بين الجينات الثلاثة.
- 2- ارسم الخريطة الوراثية.
- 3- احسب معامل التوافق ومعامل التعارض.

(ب) - 1- إذا كان ترتيب القواعد النيتروجينية في جزء من شريط DNA هو

5-ATG GGG CGT TTG TAA AGT CG-3

وضح ما يلي: (4 درجات)

- أ- تتابع الشريط المتكامل معه في جزئ DNA
- ب- تتابع القواعد النيتروجينية المنسوخة من الخيط المكمل على mRNA
- ج- عدد الأحماض الأمينية الناتجة من الترجمة مع تحديد شفرة البدء و شفرة الايقاف
- 2- اذكر فقط اهمية الهندسة الوراثية في مجال الانتاج الحيواني؟ (3 درجة)

السؤال الثاني:- وضح بالرسم مع كتابة البيانات فقط ما يلي: (10 درجات)

- (أ) - مراحل تفاعل البلمرة المتسلسل (Polymerase chain reaction (PCR). (2.5 درجة)
- (ب) - تجربة تثبت أن الـ RNA هو المادة الوراثية في بعض الفيروسات. (2.5 درجة)
- (ج) - الفرق بين Normal male wild Tfm gene والـ Testicular feminization (2.5 درجة)
- (د) - نظام الـ Lac Operon في بكتريا الـ E. coli في حالة وجود وغياب سكر اللاكتوز. (2.5 درجة)

← انظر خلفه

السؤال الثالث:- في جدول انقل فقط رقم العبارة من العمود (أ) والحرف للعبارة المناسبة من العمود (ب) ؟ (15 درجة)

(أ)	(ب)
1 انزيم الهليكيز	A موضع يسبق الجين ويحتوي على تتابعات محددة يتعرف عليها أنزيم الـ RNA Polymerase لبدء عملية النسخ
2 النسبة 2:1 تمثل حالة	B التفوق المتنحي
3 النسبة 9:3:4 تمثل حالة	C نوع الجنس في الدروسوفيلا (إناث فائقة)
4 Primase	D نوع الجنس في الدروسوفيلا (ذكور)
5 SSB proteins	E يخلق بادئات RNA قصيرة
6 DNA.polymerase II	F وهو يوجد أساسا في النوية ويقوم بنسخ الجينات الخاصة بإنتاج الـ RNA الريبوسومي rRNA
7 RNA polymerase II	G يلعب دوراً هاماً في اصلاح الأخطاء التي تحدث أثناء التضاعف
8 نسبة $5/4 = X/A$	H تعمل على تثبيت سلاسل الـ DNA المفردة أثناء التضاعف
9 Topoisomerase (Gyrase)	I جينات مميتة متتحية ذات أثر مظهري سائد
10 RNA polymerase I	J وهو يوجد في النواة ويقوم بنسخ الجينات المشفرة للبروتين.
11 نسبة $1/2 = X/A$	K من شفرات الإيقاف
12 DNA Ligase	L يزيل الحلزونة الفائقة الموجبة لجزيئ الـ DNA في عملية التضاعف
13 UGA	M يعمل على ربط شظايا أوكازاكي
14 Exons	N المناطق الشفرية التي يتم ربطها ببعضها في جزيئ mRNA الناضج
15 Promoter	O يعمل على فك سلاسل الـ DNA عن بعضهما في خيط الـ DNA المزدوج

السؤال الرابع: (10 درجة)
ضع علامة (√) امام العبارة الصحيحة وعلامة (X) امام العبارة الخاطئة (قم بعمل جدول في كراسة الإجابة به رقم الجملة فقط والعلامة المناسبة)

1	الـ Anticodon هي ثلاثة قواعد نيروجينية موجوده على الـ tRNA	()
2	تتحور النسبة المندلية من 9:3:3:1 في حالة الجينات متماثلة التأثير إلى النسبة 13:3	()
3	يحتاج الـ DNA لفك الروابط بين القواعد النيتروجينية طاقة أعلى إذا كانت نسبة الـ A + T أكبر من نسبة الـ G + C	()
4	يحدث نسخ للجينات التركيبية في حالة نمو بكتريا الـ Ecoli على بيئه بها سكر الجلوكوز	()
5	الصفات التي تنتقل من الذكور لأبنائها الذكور مباشرة تعرف باسم الوراثة التصالية	()
6	النوكليوتيد عباره عن (قاعده نيروجينية + سكر خماسي + مجموعة فوسفات)	()
7	نظام تحديد الجنس في نبات الأسبرجس نظام ببني	()
8	شظايا أوكازاكي مقاطع من الـ DNA ناتجه من تضاعف خيط الـ DNA القائد	()
9	التهجين بين نباتات ♂ S2S3 مع نباتات ♀ S3S4 يعطي نسل بنسبة 100% في حالة سلسلة اليات عدم التوافق الذاتي	()
10	يتحول الـ pre-mRNA إلى mRNA ناضج بعد إزالة مناطق الـ Exon وربط مناطق الـ Entron	()
11	فرد خليط لأربعة أزواج من العوامل الوراثية يعطي ثمانية أنواع من الجاميطات	()
12	الصفات المحدده بالجنس تعني ظهور هذه الصفات في جنس بدرجة أكبر من الجنس الآخر	()
13	النسبة 12:3:1 تمثل الجينات المكمله والتي يلزم لإظهار صفاتها الليل ساند من كل موقع وراثي على الأقل	()
14	شكل العرف في الدجاج حاله من حالات التحور في النسب المندلية برغم ظهور نفس النسبة 9:3:3:1	()
15	يؤدي فقد جين SRY إلى ظهور متلازمة الأنوثة الخصيوية	()
16	الطريقه الأساسية لتضاعف الـ DNA هي الشبه محافظه	()
17	الـ Mutant هي المادة الكيميائية التي تسبب الطفرة	()
18	تكون نسبة الاتحادات الجينية الجديدة في حالة الارتباط التام هي 50%	()
19	من أهم خصائص المادة الوراثية القدرة على التضاعف الذاتي وعدم الثبات الوراثي	()
20	التلقيح العادي والتلقيح العكسي يعطي نتائج متماثلة في حالة الصفات المرتبطة بالجنس.	()

إنتهت الأسئلة مع أطيب التمنيات بالتوفيق..

د/ بهاء الدين السيد عبد الفتاح

11/5/20

لجنة الممتحنين:- د/ عبد اللطيف هشام عبد اللطيف

2/5/20