

Department of Zoology

Faculty of Science

Exam: Special topics in Zoology II

4th Level Zoology

Code: 402Z.

الإجابة في نفس ورقة الأسئلة



كلية العلوم قسم علم الحيوان

امتحان المستوى: الرابع

شعبة: علم الحيوان

المقرر: موضوعات مختارة في علم الحيوان ٢

رقم المقرر ورمزه: ٤٠٢ ح

الزمن: ساعتان

٢٣ مايو ٢٠١٩

I-Choose the correct answer of the following:

(10 marks)

- 1 -The top thin layer of the soil is called (aerosphere – surfosphere - pedosphere).
- 2-The application of chemical substances, such as formalin, to the soil surface has been used to drive out (earthworms - centipedes - both).
- 3- Consisting mainly of mineral matter mixed with some humified organic matter (litter – humus – fermentation layer).
- 4 -Sieving soil to collect fauna considered (behavioral – mechanical– other method)
- 5-Nematodes are listed with (mesofauna – microfauna –both)
- 6-The best material to preserve soil animals (formalin – sodium chloride – ethanol).
- 7-Soil provides their organisms by the following except (food– shelter – concealment – pH).
- 8 -The vegetation layer above the soil called (heidaphone – euedaphone – epigon).
- 9 -The soil acari are represented by (Cryptostigmata – Prostigmata – Mesostigmata – all).
- 10 -Predation, parasitism and herbaceous are (feeding – locomotion – behavior activities).

II- Put (√) or (x):

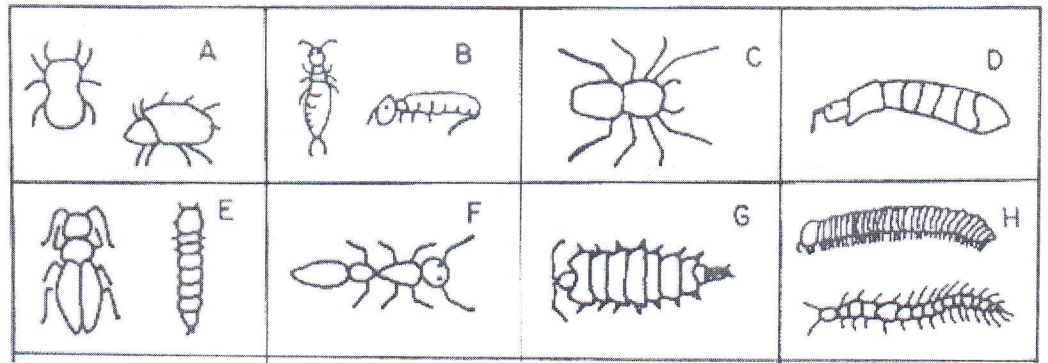
(10 marks)

- 1 -Tardigrades are soil animals called water bears ()
- 2 -Crustacea represented in the soil by members of the Ostracoda, Copepoda, and Isopoda ().
- 3 -Adaptations to subterranean life to exist in the absence of light and reduced oxygen supply ().
- 4 -The mouthparts of soil mites are modified according to whether they are phytophagous, or carnivorous feeders ().
- 5 -Ecotoxicology is the study of the harmful effects of chemicals upon ecosystems ().
- 6 -LD50 is the effective dose of toxicant to kill half number of test specimens ().
- 7 -Butterflies are considered with soil fauna ().
- 8 -Legs of the excavators are modified for burrowing ().
- 9 -Lighted traps are best method for collecting the surface dwelling insects ().
- 10 -Birds are considered with soil fauna ().

III-Naming five only of the following figs.:

(10 marks)




- A-.....
B-.....
C-.....
D-.....
E-.....
F-.....
G-.....
H-.....



→ انظر خلفه

IV- Comment:

(10 marks)

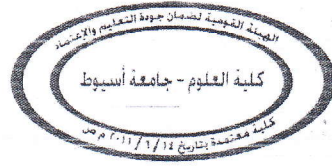
V-Write briefly on two only of each following

(10 marks)

- 1-The preferred method for collecting soil fauna.
- 2-Classification of the soil fauna according to the habitat preference.
- 3-Man and the soil.

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ZOOLOGY/ENTOMOLOGY DEPARTMENT

Final exam. June 2019

Code: 418 Z

Time: 2 hrs.

Total degree = 50

I- Embryology

1-a- Put False (F) or true (T) and correct the false one: 10 mark

1. Blastomere contains the diploid number of chromosomes.
2. Parthenogenesis means the development of the eggs after fertilization.
3. The chorda-mesoderm lying along themid-ventral line of the gastrula.
4. Oviparous animals have direct contact with mother.
5. Diffused placenta found in horses and pigs.
6. The yolk sac is made up of the somatopleure.
7. Spermatogenesis is the changes of spermatids to sperm.
8. Fertilizin attract the spermatid to the egg membrane.
9. Deuterostomes have undetermined cleavage.
10. The lining of the respiratory tract arises from the ectoderm.

1-b- Choose the correct answer

9 mark

- 1- All these structures are derivatives of the ectoderm except
(a) retina (b) spinal cord (c) thyroid gland / (d) epidermis
- 2- The larval stage is a characteristic of
(a) Reptile (b) Mammals (c) Birds (d) Amphibia
- 3- The liver cells are derived from the
(a) Ectoderm (b) mesoderm (c) endoderm (d) neural crest
- 4- Meroblastic cleavage occurs in
{(a) isolecithal (b) mesolecithal (c) polylecithal (d) centrolecithal} eggs.
- 5- Cleavage in protostome animals is
(a) radial (b) circular (c) spiral (d) all answers correct).
- 6- Primary egg membrane is produced by
(a) follicular cells (b) ovum (c) oviduct (d) uterus).
- 7- The epimere is differentiated into
(a) dermatome (b) sclerotome (c) myotome (d) all answers

8- The amnion is made up of

(a) ectomesoderm (b) mesoendoderm (c) endoderm (d) all answers correct

9- The allantois grows from the floor of the

(a) foregut (b) midgut (c) hindgut (d) all answers correct

2- Write short notes on two only:

6 mark

1- Different types of stem cells according to its potentials

2- Oogenesis.

3- Formation of blastula in the toad from fertilized egg.



Assiut University
Faculty of Science
Department of Zoology

Final exam of
Experimental Embryology
(Z438) for Zoology students

June, 16th 2019
Time: 2 hours
Total marks: 50

Section I: choose the right answer: (5 marks)

- 1- If a tumor with unlimited growth becomes malignant, it may be
(a) carcinomatous (b) sarcomatous (c) both (d) none
- 2- Destructive metabolic phase in regeneration is
(a) catabolic (b) anabolic (c) respiratory (d) excretory
- 3- The greatest regenerative ability among vertebrates is found in
(a) amphibians (b) reptiles (c) mammals (d) coelenterates
- 4 - Tumor producing gene in a virus is called
(a) oncogene (b) teratogen (c) mutagen (d) carcinogen
- 5- Respiration in Amphibian tadpoles is achieved by
(a) gills (b) lungs & skin (c) gills & skin (d) none of them

Section II: State true or false: (5 marks)

- 1- Tail regeneration in lizards is called compensatory regeneration. ()
- 2- Blastema formation is a step comes directly after wound healing. ()
- 3- Larval forms of animals are specialized for reproduction. ()
- 4- Thyroxin is the most active player in metamorphosis. ()
- 5- Hartsoeker is considered the first major embryologist known to history. ()

Section III: (10 marks)

- Write in details on theories explaining cancer formation and methods of curing cancer.

Section IV: Answer the following two questions: (10 marks)

- 1- What are the characteristics of animals and ethics to be considered in experimental embryology animals?
- 2- Describe the biochemical respecification during metamorphosis.

Section V: (10 marks)

- 1- Explain and draw the different stages of amphibian limb regeneration.

Section VI: Explain and give significance of ONE experiment of the following: (10marks)

- 1- Protective effect of proanthocyanidins against malformations in chick embryo.
- 2- Effect of mobile electromagnetic field on embryonic development.
- 3- Effect of amoxicillin on fetus development.
- 4- Effect of cadmium and copper on embryonic development.
- 5- Toxic effects of meglumine antimoniate on chick embryo.

End of questions -----

Best of luck

Dr. Reda A. Ali
Prof. Experimental Embryology

University: Assiut

Introduction to embryology & evolution

Faculty: Science

Code: 418 Z Total degree = 50

Department: Zoology

Time: 2 hrs.

Final exam. June 2019

II. Evolution

Q3: Choose the correct answer:

(10 marks)

- 1- (Weight bearing- Heat retention- Respiration- All) are physical obstacles to transition from water to land.
- 2- Fossil records (accept – deny - assure) "Tree of life".
- 3- Mutations give rise to (new species – sterility- variation).
- 4- (Inheritance of characters - Natural selection - Mutation) is the mechanism of New Darwinism.
- 5- Finches of Galapagos are examples of (evolution – variation - mutation).
- 6- Haeckel's Tree was based on (sudden – gradual - both) origin of species.
- 7- (Piltdown- Nebraska- Java) man is just a tooth of pig!
- 8- Darwin and Wallace were based on (cloning technology-genetics- natural selection).
- 9- The Cambrian explosion revealed (similar- various - no) creatures.
- 10- (Mutation-Metamorphosis - Natural selection) is a complex preplanning process.

Q4: Answer only three of the following:

(12 marks)

- 1- Compare between the origin of animals according to Darwinism & fossil record.
- 2- Why homologous structures concept failed to be an evidence of evolution?
- 3- Evaluate The New Darwinism.
- 4- Demonstrate why *Archaeopteryx* couldn't be a link between birds & reptiles.
- 5- Evolution theories considered vestigial organs as evidence of evolution. Discuss 3 organs.

Q5: Give the evolutionary term for the following:

(3 marks)

- 1- A missing link between aquatic and land animals.
- 2- Organs were inherited from ancestors without any function.
- 3- Non-living matter could come together to form living organisms.



Assiut University
Faculty of Science
Zoology Department
(9/6/2019)

Course name: Comparative
anatomy of vertebrate
Course code: (432-Z)
Time: two hours

Read the questions carefully.

Answer the Four following questions with clear drawing illustration for questions number (3 &4)

Question 1: (20 pt.)

- Choose the single response that is the correct answer of the following.
1. I've learned the vertebrate comparative anatomy is that
 - a) Like Alphabet, no New discoveries will made because past workers have found out all there is to knew about anatomy
 - b) Generally speaking, the number of parts in a vertebrate has increased with evolution.
 - c) A great mammalian structures have homologies in fish, such as our kidneys are the same as in fish
 - d) Obviously, none of the above is really true.
 2. The only possible homology of vertebrate in lampreys
 - a) Notochord
 - b) Lateral neural cartilages
 - c) Myomeres
 - d) Dorsal hollow nerve cord
 3. Interaction of epidermis and dermis is necessary to
 - a) Allows nourishment for the skin
 - b) Allows protection for the body

- c) Produce a normal skin derivative
 - d) Counteract external forces
- 4. Which of the following is Not an epidermal in origin**
- a) Horn
 - b) Hair
 - c) Claws
 - d) The bony plates of extinct fish
- 5. Which of the following is untrue of the integument of amphibians**
- a) Contains poison glands
 - b) Is moistened by mucous
 - c) Respiration occurs across it
 - d) Contains osteoderms
- 6. The best example of homology is**
- a) Hyomandibular and stapes
 - b) Lizard leg and dolphin flipper
 - c) Scales of shark and mammalian teeth
 - d) Pigeon wing and bat wing
- 7. Which term or combination of terms best describes dermal armor**
- a) Calcified cartilage
 - b) Spongy bone
 - c) Membrane bone
 - d) Haversian systems
- 8. A true horn arises as**
- a) Only bony ossicles
 - b) Dermal bone
 - c) Epidermal keratin
 - d) Epidermal- dermal origin

9. A unique mammalian glands

- a) Mammary and sebaceous
- b) Sweat and mammary
- c) Sweat and lacrimal
- d) Lacrimal and wax

10. Feathers may perform

- a) Insulation
- b) Aerodynamic
- c) Display
- d) All of the above

11. The prechordal cartilages contribute in the formation of

- a) Basal plate
- b) Notochord
- c) Ethmoid plate
- d) Occipital ring

12. The parachordal cartilages contribute to the formation of

- a) Sphenoid in mammals
- b) Pleurosphenoid in reptiles
- c) Basisphenoid in fish
- d) All of the above
- e) Non of the above

13. Which of the following does Not happen during the development

- a) The optic capsule fuses to the ethmoid plate
- b) The otic capsule fuses to the basal plate
- c) The nasal capsule fuses to the ethmoid plate
- d) The notochord fuses with the parachordal cartilage

- 14. The structure that allows mammals to breath while they chew**
- a) Primary palate
 - b) Alisphenoid
 - c) Secondary palate
 - d) Hyoid body
- 15. The skull "excluding jaws" of mammals is composed of which of the following elements**
- a) Neurocranium
 - b) Dermatocranium
 - c) Splanchocranium
- 16. Which of the following is /are never components of the dermatocranium**
- a) Roofing bones
 - b) Primary palate
 - c) Upper jaw
 - d) Primary brain case
- 17. Which of the following bones does not form a part of the secondary palate in alligator**
- a) Maxilla
 - b) Premaxilla
 - c) Palatine
 - d) Parietal
- 18. The frontal is in this series of bone**
- a) Mid dorsal series
 - b) Mandibular series
 - c) Circumorbital series

19. Developmental changes in the location of mesoderm that form vertebrae

- a) Segmental to intersegmental
- b) Intersegmental to segmental
- c) Visceral to somatic
- d) Epiaxial to hypoaxial

20. A transverse processes allow attachment of sternal rib

- a) Parapophyses and basopophyses
- b) Diapophyses and parapophyses
- c) Pleuropophyses and hypophyses

Question 2: Define the following: (5pt)

- a- Cephalization
- b- Metamersium
- c- Analogous structures
- d- Phylogeny
- e- Ontogeny

Question 3: (15 pt.)

- Describe the structure of the visceral arches and their fate in terrestrial vertebrates to mammals

Question 4: (10 pt.)

- Illustrate in full details the developmental stages of one only of the following
 - A. Placoid scale
 - B. Contour feather
 - C. Vertebra