



<p>Assiut University Faculty of Science Department of Zoology</p>	<p>Final exam of Experimental Embryology (Z438) for Zoology students</p>	<p>May, 24<sup>th</sup> 2018 Time: 2 hours Total marks: 50</p>
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**Section I: choose the right answer: (5 marks)**

- 1- The first known embryologist is .....  
(a) Wolff (b) Karl Ernst Von Baer (c) Aristotle (d) Ernst Haeckel
- 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 - Frog tadpole is a .....  
(a) Primary larva & direct developer (b) Primary larva & indirect developer  
(c) Secondary larva & direct developer (d) Secondary larva & indirect developer
- 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 morphallaxis. ( )
- 2- Blastema fails to regenerate due to irradiation. ( )
- 3- Larval forms of animals are specialized for reproduction. ( )
- 4- Prolactin is the most active player in metamorphosis. ( )
- 5- Da Vinci is considered the first major embryologist known to history. ( )

**Section III: Fill in the space with suitable words: (10 marks)**

- 1- Remodeling during tadpole metamorphosis involves ..... and .....
- 2- ..... is a co-discoverer of sperm.
- 3- Except ....., platy helminthes do not regenerate to any extent.
- 4- Preformationists are divided into.....and.....
- 5- Marcelo Malpighi was famous for: ....., ..... and .....

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

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

**Section IV: (10 marks)**

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

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

- 1- Protective effect of ghrelin against damage caused by hypoxia.
- 2- Effect of mobile electromagnetic field on embryonic development.
- 3- Effect of ethanol on craniofacial development of chick embryo.
- 4- Effect of Sorafenib on chick embryo development.
- 5- Parasitic infection during pregnancy and its effects on offspring.

End of questions ----- Best of luck

*Dr. Reda A. Ali*

Department of Zoology

Course: Immunology (Z412)

Second semester 2017-2018

Time: 3 hours Total degree: 50



قسم علم الحيوان  
المقرر: علم المناعة (Z412)  
الفصل الدراسي الثاني 2017-2018  
المستوى الرابع  
الزمن: ثلاثة ساعات الدرجة الكلية : 50

Answer all the following questions:

**Question 1** Provide a definition for the following: (10 marks)

- A. Chemotaxis
- B. Degranulation
- C. Immunological synapse
- D. Allergen and its types
- E. Cytokines

**Question 2** Write on two only of the following: (10 marks)

- A. Epithelial surfaces as an important factor of innate immunity.
- B. Natural and artificial adaptive immunity.
- C. Organs of immune system.

**Question 3** Answer two only of the following items: (10 marks)

- A. Mast cells and their primary and secondary mediators of allergy.
- B. Benign WBCs disorders.
- C. Factors of innate immunity that limit growth of microorganisms within the body.

**Question 4** Answer two only of the following items: (10 marks)

- A. In a table compare between the different classes of antibodies.
- B. Compare between B and T cell receptors.
- C. In a table compare between the hypersensitivity reactions in Type I, Type II, Type III and Type IV.

**Q5** Using diagrams describe the three different pathways of complement system. (10 marks)

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**GOOD LUCK**

**Dr. Gamal Badr**

Professor of Immunology

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امتحان الفصل الدراسي الثاني  
للعام الجامعي 2017-2018



القسم الذي يقدم المقرر: الوراثة	كلية العلوم	الفرقة: المسنوى الرابع
اسم المادة: (ع. ٢) وراثه العشائر	د/ أحمد عاطف سلام	الزمن: ساعتان
لجنة الممتحنين: د/ جمال ابراهيم أحمد		

السؤال الاول: (٢٥ درجة موزعه بالتساوي على نقاط السؤال)

العشيرة	AA	Aa	aa	N
1	50	20	30	100
2	20	20	5	45
3	562	375	63	1000

- اختبر مدى اتزان العشائر التالية وإذا لم تكن متزنة احسب تكرارات الاتزان
- إذا هاجرت ٤٠% من الافراد من العشيرة الاولى الى العشيرة الثالثة. ما هو تكرار الاليل المتنحي بعد هجرة و احسب التغير في تكرار الاليل السائد بعد الهجرة
- في العشيرة الثالثة: اذا كان الانتخاب ضد الافراد المتنحية بمعامل انتخاب 0.9 . ما هو تكرار الاليل المتنحي بعد جيل واحد من الانتخاب و احسب التغير في الطرز الوراثية الاصلية؟
- إذا كان معدل طفور الاليل A الى الاليل a يساوى  $10^{-6} \times 0.5$  و معدل الطفور العكسي  $0.25 \times 10^{-7}$  في العشيرة الثانية. احسب معدل التغير في تكرار الاليل السائد بعد الطفرة؟
- اى من تلك العشائر تعتبر مرباه داخليا؟

السؤال الثاني (١٠ درجة درجات)

- لسلسلة الأليلات المتعددة للون فراء الأرانب كان إتجاه السيادة :

$$C \rightarrow h \rightarrow a$$

ألبينو هيمالايا ملون

في عشيرة عشوائية التزاوج ، كانت الأعداد المشاهدة على النحو التالي :

Colored	Himalayan	albino
300	180	100

احسب الأعداد المتوقعة من كل فئة من الفئات المظهرية . (٧ درجات)؟

أنظر خلفه



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**Question 2:**

(10 pt)

- **Fill in the blanks**

1. Name two vertebrate structures that contain enamel

.....  
.....

2. Ecdysis includes.....

3. Giraffe horn arises as.....bone from.....and

cover with.....

4. Sternal rib is.....rib, while the ribs which has no

attachment with the sternum is.....

5. Mention a mammalian skin glands;

A- associated to sensation.....

B- associated with immunity .....

**Question 3:**

(10 pt.)

- What is the fate of the mandibular arch? (Clarified your answer with clear drawing)

**Question 4:**

(10 pt.)

- Describe the development of the vertebral column, and the structure of a generalized vertebra. (Clarified your answer with clear drawing)

(والله ولي التوفيق)

17. Which of the following is not part of the axial skeleton
- a) Hyoid
  - b) Ribs
  - c) Middle ear
  - d) Pelvic girdle

18. The structures overlap each other in tetrapod vertebrae are

- a) Transverse process
- b) Spinous
- c) Zygapophyses
- d) Neural arches

19. Goblet cells are common in

- a) Cephalochordata only
- b) Bony fish
- c) Amphioxus and some bony fish
- d) Bony fish and amphibian

20. Human teeth are

- a) Thecodont
- b) Pleurodont and permanent
- c) Thecodont and diphyodont
- d) Pleurodont and replaced all life

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11. Which of the following is not a part of alligator secondary palate
- a) Maxillae
  - b) Vomer
  - c) Premaxillae
  - d) Palatine
12. The sense capsules are in this category of bone
- a) Replacement
  - b) Endochondral
  - c) Dermal
  - d) Prechordal
13. Hyostylic jaw suspension is found in
- a) The majority of Selachii
  - b) Tetrapod
  - c) All Teleostei
  - d) (a, c)
14. Fate of the otic process is
- a) Incus
  - b) Quadrate
  - c) Stapes
  - d) Inner ear
15. Frontal and parietal bones in the category of
- a) Replacement
  - b) Endochondral
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16. The jaw joint of mammal is
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Assiut University  
Faculty of Science  
Zoology Department

Course name: Comparative  
anatomy of vertebrate

Course code: (432-Z)

Time: two hours (18/5/2018)



## **Answer the Four following questions**

**Question 1:** (20 pt.)

- **Choose the single response that is the correct answer of the following.**

1. **Keratinized skin well presented in**
  - a) All vertebrates
  - b) Amniotic vertebrates
  - c) Mammalian class
  - d) Only in class: Reptilia
2. **Vertebrates exhibit metamearism, expressed by**
  - a) The serial arrangement of vertebrae
  - b) The skin
  - c) Serial arrangement of vertebrae and spinal nerves
  - d) The spinal nerves only
3. **Epidermal cells are rich of**
  - a) Keratin
  - b) Mitotic division processes
  - c) Several glands
  - d) Specialized cells
  - e) All of the above
4. **Which of the following is not epidermal in origin**
  - a) Horns
  - b) Hair
  - c) Claws
  - d) The bony plates of extinct fish



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**5. The prominent component of the vertebrate dermis are**

- a) Elastic fibers
- b) Collagen fibers
- c) Divided cells
- d) Glandular cells

**6. Keratinization is major challenge to face**

- a) Humid environment
- b) High Temperature
- c) Dry environment
- d) Non of the above

**7. The dermal bony scales are prominent in**

- a) Ostracoderm
- b) Placoderm
- c) Extinct Dinosaurs
- d) Chelonia
- e) (a, b, c, and d)

**8. Example of analogous structure is**

- a) Scales of fish and Reptiles
- b) Wing of bird and the forelimb of tetrapod
- c) Placoid scale and mammalian teeth

**9. Specialized function of the skin**

- a) Forms exoskeletal structures
- b) Hold the shape of organism
- c) Prevents the entrance of organisms
- d) All of the above

**10. The parachordal cartilage contributes to the formation of**

- a) Basal plate
- b) Ethmoid plate