Assiut University
Faculty of Science
Zoology and Entomology
Department

First Semester/ Pests of Stored Grains
Final Exam
December 21/ 2017

Time: 2 hours
Level: 4th
Code: 453 E

Answer the following questions (50 marks)

Question 1: Write short notes on Five only of the following: (15 marks)

a) Two primary pests of cereals
b) *Sitotroga cerealella* and Indian meal moth
c) Flour beetles
d) Two pests of dried fruits and spices
e) Two pests of leathers and wools
f) Two pests of stored pulses
g) Two pests of dates

Question 2: (15 marks)

a) What are the methods used to detect hidden infestation in stored grains?
b) What are the instruments used for sampling in stored products?
c) What are the sources and kind of infestation of stored grains?
d) What is grain heating phenomenon?

Question 3: (20 marks)

a) Is the use of biological control in the management of stored grain insects favorable? Why?
b) What are the roles of fumigants and pheromones in stored grains pest management?
c) How does the status of grains affect the population of insects in stores?
d) What are the protective and curative methods of stored products against insect pests?

End of questions

With best wishes
By Dr. Ali Mohamed Ali

Assiut University | Forth year Exam | 12/1/2018

Faculty of Science | Reproductive Physiology

Department of Zoology | Time: 3 hours

فسيولوجيا التكاثر (٤١١ ح)

Answer the following questions:- وضح بالرسم كلما امكن ذلك

1-Answer 3 only of the following: 30 Mark

a. Draw and describe the testes as glands that produce sperms and the male hormone testosterone.

b. Describe the chemical composition of semen (seminal fluid) and draw the principal parts of sperm.

c. Explain the functions of seminal vesicles, prostate gland and bubourethral glands in secreting constituents of seminal fluid.

d. Describe the physiological effects of testosterone.

2. Answer 3 only of the following: 30 Mark

a. Describe the ovaries as glands that produce ova and female sex hormones (draw a labeled diagram of the ovarian cycle in woman).

b. Describe the function of the uterine tube in transporting a fertilized ovum to the uterus by drawing diagrammatic illustration of segmentation of fertilized ovum and subsequent implantation.

c. Identify and draw the anatomical portions of the uterus and their functions.

d. Describe the structure of the mammary gland and write about hormones related to milk production.

3. Write on 4 only of the following: 20 Mark

a. Explain meonopause.

b. Functions of Placenta and umbilical cord during pregnancy.

c. Functions of Corpus luteium during menstrual cycle and during pregnancy.

d. Draw steps of spermatogenesis and oogenesis.

e. Differences between Oesterous cycle and menstrual cycle.

4. Please write √ or X: 20 Mark

a. Corpus luteium secrets Androgens ( )

b. A zygote with 46XY chromosomes is a female ( )

c. Failure of testis to descent into the scrotum is called cryptorchidism ( )

d. Lutinizing hormone in male (LH) is responsible of secreting testosterone. ( )

انتهت الاسئلة مع تمنياتي بالنجاح أ.د. خديجة عبد الحميد

Assiut University
Faculty of Science
Department of Zoology
Total Mark 50

Vertebrate Taxonomy
Course code Z433
Time:2 hours
Final exam. 2017/2018

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Answer the following questions:- (30 Mark)

1- Complete the following:

- The upper jaw of *Bradyodonti* is fused to braincase and the ..... is not involved in jaw suspension
- In .....the gill pouches open to the exterior either separatelly or .....
- The gill slits are venterally placed in .....
- In ..... the gills are covered by flap of skin.
- The pelvic fins are modified to form claspers in.....
- The paired fins have a fleshy lobe at their base in.....
- In..... there are two separate dorsal fins.
- In *Halecomorphi*..... is present together with numerous.....
- The frontal and parietal bones are ..... is the skull of *Anura.*
- Limbs and girdles are..... and the body is worm-like in.....
- The skull has no..... in *Chelonia.*
- The quadrate bone is..... in *Crocodilian* skull.
- Skull of birds is.....i,e with single occipital condyle.
- In Birds vertebrae with..... centra.
- Mammals are viviparous except.....
- Except in *Monotremes* and most of the *Marsupials* ..... is present which supplies nourishment to the embryo.
- Mammary glands without..... in *Prototheria.*
- Well developed .....is present in females of *Metatheria.*
- Class: *Chondrichthyes* is divided into subclasses..... and .....
- Class: Osteichthyes subdivided into subclasses.....,
  .....and.....
- Subclass: *Theria* is divided into 3 infraclasses
  .....,.....and.....

- Class: *Aves* includes 3 *superoders*…… , ……and ……
- Phylum *Chordata* includes 3 subphyla……, …… and ……..
- In *Crocodilia*,…… ribs are present in most vertebrae.
- In *Rhynchocephalia*, the cloacal aperture is…….. and there is no ……
- In *Serpents* the vertebrae have accessory…….
-In Birds, sound production is from……..
– *In Carinatae*, the terminal caudal vertebrae are fused to form ……
- In Mammals, the quadrate and aricular bones are transformed into …… and ……..of ear apparatus.
- In Mammals, neck with…….. vertebrae.
- In Mammals, the tympanic bones are fused to form the …… which is further modified into……
- In Mammals,…… connecting the two cerebral hemisphers.
- The external ear pinna is present in mammals except in……..and……
- In *Eutheria*, testes are…….. contained in……
- In *lagomorpha*, two pairs of …….. present in the upper jaw, but…….. are absent.
- In *Cetacea*, hairs are reduced in adults, only few…… on the snout.
- In *Proboscidea*, the incisor teeth of upper jaw are greatly elongated and form……..
- In sirenia, fore limbs are modified into…….. for swimming.
- Members of *Chondrostei* have ……..tail.
- Epidermal glands are present keeping the surface moist for…….. in *Amphibia.*

-In Mammmals the opening of trachea into the buccal cavity is guarded by……

-Primates have 5-digits protected by……..

2-Mention the taxonmic charaters of <u>five</u> only of the following:(20 Mark)

a-Prototheria *b-Ratitae*
c-Bradyodonti *d-Anura*
e-Serpents *f-Metatheria*

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Best wishes

Prof.Dr.Usama Mahmoud

Assiut University Faculty of Science Zoology Department	Final Exam of Developmental Biology (Z437) For 4th levels Zoology Students	Jan, 5th 2018 Time: Two hours Total marks: 50

Answer the following questions using labeled drawings when it is possible: (10 marks each)

1- A- Explain the factors that control successful external fertilization. (5 marks)

B- Show the functions of two somatic cells associated with gametogenesis. (5 marks)

2- A- Describe the process of sperm capacitation in mammals and sea urchin. (5 marks)

B- Summarize in a chart the sequence of events after gamete membrane fusion. (5 marks)

3- A- Write notes on only three of the following: Parthenogenesis – cryopreservation – intracytoplasmic sperm injection – mitochondrial cloud. (6 marks)

B- Show with labeled drawings only the development of heart and differentiation of mesomeres with reference to different types of kidneys. (4 marks)

4- A- Describe the role of each of the following: speract – cyclin - serine protease - glycosaminoglycan. (4 marks)

B - Clarify only three of the following: lampbrush chromosomes - spermiogenesis – Kartagener triad syndrome - micropyles. (6 marks)

5- A- What is the significance of each of the following: induction- morphogenesis – pattern formation – differentiation? Explain using an example for each. (4 marks)

B- Show with labeled drawings only the derivatives of fore gut and development of mammalian eye. Mention the embryonic origin of each part of the eye. (6 marks)

End of questions.....Best of Luck

Dr. Reda A. Ali

Prof. Exp. Embryology

Zoology Department
Course title: Hematology
First Semester 2017-2018
Time: 2 hours
Total degree: 50

قسم علم الحيوان
المقرر: علم الدم (413 ح)
الفصل الدراسي الأول 2017-2018
الزمن: ساعتان
الدرجة الكلية : 50

Answer only 5 questions of the following:

Q1: Choose the correct answer (one answer only): (10 marks)

1. **The key active protein in the clot retraction process is :**
   a)- plasmin
   b)- fibrin
   c)- actin
   d)- thrombin

2. **Christmas disease occurs due to:**
   a)- deficiency of coagulation factor XI
   b)- deficiency of coagulation factor XII
   c)- deficiency of coagulation factor IX
   d)- deficiency of coagulation factor XIII

3. **Pernicious anemia is caused by the loss of:**
   a)- vitamin B12
   b)- gastric parietal cells
   c)- iron
   d)- vitamin K

4. **Lymphocytosis is an increase in the number of :**
   a)- lymph nodes
   b)- lymphocytes
   c)- lymphoblasts
   d)- lymphomas

5. **Genetic defect in hemoglobin synthesis causes:**
   a)- Hemolytic anemia
   b)- Aplastic anemia
   c)- Thalassemia
   d)- Polycythemia

6. **Multiple myeloma is a cancer of:**
   a)- myeloid DC cells
   b)- plasma cells
   c)- antibody-producing cells
   d)- both b and c

7. **ADP, ATP, 5-HT and calcium are included in dense bodies in:**
   a)- Mast cells
   b)- RBCs
   c)- platelets
   d)- plasma

8. **A person with type AB blood group has AB antigens on RBCs and.....**
   a)- anti-A Abs in the plasma
   b)- no Abs in the plasma
   c)- anti-B Abs in the plasma
   d)- both types of Abs in the plasma

9. **The two coagulation factors that are produced by liver and platelets are :**
   a)- factors V and XIII
   b)- factors VI and XII
   c)- factors XI and IX
   d)- factors III and IV

10. **Blood dendritic cell originate from :**
    a)- myeloid lineage
    b)- lymphoid lineage
    c)- megakaryocytes
    d)- both a & b

Q2: Write in details about the organs and cells of Immune system. (10 marks)

Q3: Write in details about the benign and malignant WBCs disorders. (10 marks)

انظر باقي الأسئلة خلف الصفحة

Q4: **Describe the three types of anemia according to the MCV values and write in details about the hemolytic anemia.** **(10 marks)**

Q5: **Write briefly on the following items:** **(10 marks)**

A. Disorders and diseases of blood coagulation.

B. The specific inhibitors of clotting factors.

C. Endocrine functions of vessels endothelial cells during hemostasis.

Q6: **Write in details about organ transplantation and the associated complications.** **(10 marks)**

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انتهت الأسئلة

Best wishes

Dr. Gamal Badr

Professor of Immunology
Zoology Department
Website: http://www.aun.edu.eg/membercv.php?M_ID=393
e-mail: gamal.badr@aun.edu.eg

ZOOLOGY DEPARTMENT
FACULTY OF SCIENCE
ASSIUT UNIVERSITY
Insect Immunity (Z 447)

قسم علم الحيوان
كلية العلوم - جامعة أسيوط
Semester exam
23rd Dec. 2017
Time Allowed: 2 hours

Answer the Following Questions (50 Marks)

الإجابة في نفس ورقة الأسئلة عدا السؤال الأول يُجاب عنه في كراسة إجابة مُنفصلة.

I- Write short notes on 4 points of the following (1&2 included): (18 marks)

1- Encapsulation in insects. (5 marks)

2- Humoral lectins. (5 marks)

3- Hemolin. (4 marks)

4- Cecropins. (4 marks)

5- Clotting and hemolymph coagulation in insects. (4 marks).

II- Complete the following sentences: (7 Marks)

1- Humoral encapsulation is reported to occur in few insects that have .....

Humoral encapsulation is a fast and efficient against ..... and .....

2- Serine proteases activate insect prophenoloxidases by cleavage at a specific site near the .....

of the zymogen.

3- In insects, antimicrobial peptides are synthesized mainly in the ....., and to less extent in

the ....., and .....

4- Melanization due to phenoloxidase activity could be noticed in the following immune responses:

(a) ..... (b) .....

(c) .....

5- Formation of nodule and cellular capsule is depending on: (a) ..... and

(b).....

6- The following are among the cytokines that produced during immune challenge:

(a) ..... (b) .....

7- The main two signaling cascades regulating expression antimicrobial peptide genes are:

(a) The ..... pathway that is activated by ..... and many .....

infections. This pathway resulted in an activated nuclear transcriptional factor called .....

(b) The ..... pathway that responds to ..... infections. This pathway resulted in an activated nuclear transcriptional factor called .....

8- Plasmatocyte spreading peptide (PSP) stimulates plasmatocytes to ..... and .....

9- In *Manduca sexta* proPO-activating protease (PAP) is stimulated by binding to a hemolymph protein cofactor called ..... forming a complex binding to a hemolymph lectin (that bind to bacterial lipopolysaccharide) in order to .....

10- In *M. sexta*; hemolymph protease-14 (HP14) function as ....., which triggers proPO activation in response to ..... and .....

III- Choose the Odd answer of the following: (11 marks)

1- In healthy *Drosophila* 3rd larvae the following hemocyte types have been reported:

(a) Plasmatocytes. **(b)** Lamellocytes. **(c)** Crystal cells.

2- **Naïve** *Manduca sexta* larvae express proPO activating proteinases (PAP):

(a) PAP-1. **(b)** PAP-2. **(c)** PAP-3.

3- In many insect species, one of the most potent stimulator of proPO activation is:

(a) Lipopolysaccharide. **(b)** Peptidoglycans. **(c)** β-1,3-glucans.

4- Hemolymph protease-14 (HP14) activates:

(a) proPAP-1. **(b)** proPAP-2. **(c)** proPAP-3.

5- Serine protease inhibitor (serpin-5) inhibits hemolymph protease (HP):

(a) HP1. **(b)** HP6. **(c)** HP21.

6- Transmembrane receptor that bind several Gram-positive and Gram-negative bacteria is:

(a) Class C SR. **(b)** Eater. **(c)** Membrane bound PGRPs.

7- Hemocyte surface receptor that associated in recognition and phagocytosis of apoptotic bodies is:

(a) Croquemort. **(b)** Transmembrane forms of Dscam. **(c)** Lipoprotein receptor related protein LRP1.

8- In *Lepidoptera* hemocytes that expressing antimicrobial peptides is:

(a) Oenocytoids. **(b)** Plasmatocytes. **(c)** Granulocyts.

9- *Bombyx mori* proPO activating enzyme (PPAE) is expressed in:

(a) Fat body. **(b)** Hemocytes. **(c)** Integument. **(d)** Salivary glands.

10- In *Manduca sexta* prepupa; after injection with bacteria; PAP-3 expression is upregulated in:

(a) Fat body. **(b)** Hemocytes. **(c)** Integument. **(d)** Salivary glands.

11- The following hemocyte types are adhesive:

(a) Plasmatocytes. **(b)** Lamellocytes. **(c)** Crystal cells. **(d)** Granulocytes.

IV- Correct the underlined sentences of the following (if it needed): (9 marks)

1- In *Drosophila*, eggs of hymenopterous parasites are encapsulated by **plasmatocytes**. ( )

The correction: .....

2- Serine proteases that directly activate proPO have been purified **only** from hemolymph. ( )

The correction: .....

3- Many insect phenoloxidases **oxidize diphenols more rapidly than monophenols**. ( )

The correction: .....

4- In Lepidopteran insects **plasmatocytes** release the plasmatocyte spreading peptide (PSP). ( )

The correction: .....

5- In the absence of immune challenge, A serine protease inhibitor **prevents the activation of the Toll pathway**. ( )

The correction: .....

6- Pathogen-associated molecular patterns (PAMPs) exist in **hemolymph upon microbial challenge**. ( )

The correction: .....

7- True clot is composed of hemocyte-derived components **only**. ( )

The correction: .....

8- Nephrocytes are found throughout the hemocele, **they are able to kill bacteria by phagocytosis**. ( )

The correction: .....

9- Toll is **a pattern recognition receptor** since it **binds directly to pathogens to get activated**. ( )

The correction: .....

V- Give a definition for each of the following: (5 marks)

1- Innate immunity: .....

.....

.....

2- Opsonization: .....

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3- Humoral defenses: .....

.....

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4- Cytokines: .....

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5- Integrins: .....

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With my best wishes

Dr. Ahmed M. Korayem