



**June (2016)**

.....

**Answer the following questions:**

(50 degrees)

**1-**Could you tell in brief about the sensory system of an insect;and how does that system play an important role controlling insect's life in their environment. (20 degrees)

**2- a-**Explain with draw; the motion of an insect' wings, (15 degrees)  
plus the frontal viewof the winged thoracic segment.

**b- -**With draw show the structure of a single ommatidium of an insect

**3-a-**What are the two structures that help in rotation sensation in insect? (15 degrees)

**b -**What is sensory ecology? And what do scientists used that branch of science for?

**c -**Why many Aphid species show strong preferences to the yellow leaves?

**d-**What are the differences between pheromones and hormones?

**e -** What are the functions of Halteres?

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Bon chance- Good luck

Azza Awad

**Section I: choose the right answer: (10 marks)**

- 1- The dorsal lip of the blastopore transplanted by Spemann into another embryo and formed a second one, that dorsal lip is called .....  
(a) organizer      (b) exciter      (c) stimulator      (d) inhibitor
- 2- Father of experimental embryology is .....  
(a) Wolff    (b) Karl Ernst Von Baer    (c) Wilhelm Roux    (d) Ernst Haeckel
- 3- An embryonic tissue is influenced by another tissue to differentiate through a process called .....  
(a) activation      (b) grafting      (c) induction      (d) transplantation
- 4- Destructive metabolic phase in regeneration is .....  
(a) catabolic      (b) anabolic      (c) respiratory      (d) excretory
- 5- The greatest regenerative ability is found in .....  
(a) amphibians      (b) reptiles      (c) mammals      (d) coelenterates
- 6- If a tumor with unlimited growth becomes malignant, it may be .....  
(a) carcinomatous      (b) sarcomatous      (c) both      (d) none
- 7- The effective teratogenic period starts from .....  
(a) early stages of development      (b) late stages of development  
(c) formation of germ layers      (d) larval stages
- 8- 85% of the cancer cases are .....  
(a) sarcomas      (b) carcinomas      (c) lymphomas      (d) leukemias
- 9- Tumors in brain, breast and skin are .....  
(a) sarcomas      (b) carcinomas      (c) lymphomas      (d) leukemias
- 10- Tumor producing gene in a virus is called .....  
(a) oncogene      (b) teratogen      (c) mutagen      (d) carcinogen



**Section II: (10 marks)**

**A- State true or false:**

- 1- Tail regeneration in lizards is called epimorphosis.
- 2- Blastema fails to regenerate due to X-ray.
- 3- Newly formed cancer cells are destroyed by the immunological responses of the cell.
- 4- Normal morphogenesis results in the formation of a terata.
- 5- Aristotle (384-322 B.C); is considered the first major embryologist known to history.

**B- Fill in the space with suitable words:**

- 1- ..... are tumors of mesodermal origin made up of ..... tissue cells.
- 2- Tumor producing viruses are called .....
- 3- Except ....., platy helminthes do not regenerate to any extent.
- 4- Preformationists are divided into ..... and .....
- 5- Marcelo Malpighi, ~1672 was famous for:  
(a).....  
(b) .....  
(c) .....

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

- 1- What are the ethical aspects that should be considered in experimental embryology lab?

**2- Describe the physiological processes involved in regeneration.**

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**Section IV: (10 marks)**

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

[illegible]

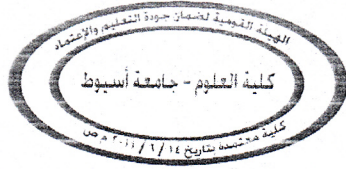
[illegible]



- 1- Combined effect of insulin and electrical stimulation on limb regeneration.
- 2- Effect of different doses of Retinoic acid on chick embryos.
- 3- Treatment of chick embryo with different doses of ethanol.

[illegible]

**End of questions..... Best of luck**



## **Answer the following questions**

### **Q1 Choose the correct answer**

(15 mark one for each)

- 1-. The members of phylum Rotifera feed by the circular motion of the  
A. mastax B. tentacles C. corona D. front legs.
- 2-. Which one of the pseudocoelomate phyla are tiny marine animals with 13 segments in the cuticle and recurved spines on the surface for locomotion  
A. Gastrotricha B. Kinorhyncha C. Priapulida D. Loricifera
- 3--Which one of the following pseudocoelomate phyla has members that are free living as adults, and parasitic in arthropods as juveniles?  
A. Nematomorpha B. Acanthocephala C. Priapulida D. Entoprocta
- 4- Members of phylum Sipuncula are considered to be feeders and are found in  
a)deposit, marine habitats b)filter, fresh waters c) predatory, terrestrial habitats  
d) herbivorous, tropical areas
- 5- The members of phylum Sipuncula are distinguished from the other phyla in this group by having  
a)an introvert- b) metamerism. C)a trochophore larvae d) a closed circulatory system
- 6-The members of phylum Pogonophora are distinguished from the other phyla by having  
a)an introvert- b-no mouth or digestive tract c- metamerism d. a closed circulatory system
- 7- A crown of ciliated tentacles in a double row around the mouth opening, which is used for respiration and feeding, is called a(n)  
A. proboscis b) radula c) introvert. d)lophophore.
- 8-The single phylum among the lophophorates that was widespread in the past and remains successful in many habitats today is the  
a)Brachiopoda .b) Sipuncula. c) Ectoprocta d) Phoronida.
- 9-Nemertea share many features with Platyhelminthes, but they have a different type of  
a)blood system -b).nervous system. -c).excretory system.
- 10-Branchiopoda is  
a)carnivorous – b) herbivorous c )suspension
- 11-Phoronida are  
a)bilateral – b)radial –c) none symmetry
- 12- Fertilization in Ectoprocta is  
a)external b)internal c)parthenogenesis
- 13 Which one of the following pseudocoelomate phyla has members that live between sand grains and can retract their bodies into a circular lorica  
A)Priapulida b)Kinorhyncha c) Gastrotricha d)Loricifera
- 14-Which of the following is a colloquial term for a nematomorph?  
A) round worm . b)horsehair worm c). phallus worm
- 15- Why is genetic diversity important?  
A)It is used in medical research to develop new drugs  
b)It gives us more choice of food  
c) It helps us guard against disease outbreaks  
d) It helps nature to adapt to changing climates  
f) All answers are correct



**Q2-Write the Scientific term**

**(10 mark one for each)**

- 1-Species that are introduced into ecosystem from the outside.
- 2-Diversity of genes within a species
- 3- The members of phylum which live exclusively on mouthparts of marine decapod crustaceans in northern hemisphere
- 4-Priority area of conservation having extremely rich in species and are under treat of extinction.
- 5-Conservation of organisms in botanical garden. Zoological parks, sanctuaries,
- 6-Variation of habitats, community types and abiotic environment of given area
- 7-Totality of genes, species and ecosystems of a given region.
- 8-Protected area of land or coastal environment having unique biodiversity.
- 9-Storage of bio material at ultra-low temperature.
- 10-Book contains a record of animals and plants which are known to be in danger and published by IUCN.

**Q3-With labelling drawing illustrate body plan five phyla only of the following**  
**( 10mark 2 each)**

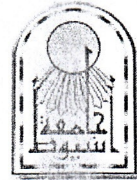
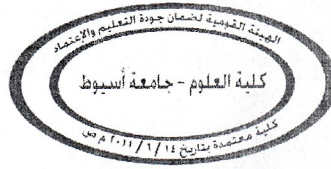
- |               |                 |                |              |
|---------------|-----------------|----------------|--------------|
| 1- Priapulida | 2- Brachiopoda  | 3-Gastrotricha | 4- Phoronida |
| 5-Tardigrada  | 6-Cheatoagnatha |                |              |

**Q4 Answer the three only of following questions** **( 15mark 5) each)**

- 1-Compare between the four Lophophorate phyla
- 2- What are the threats to biological diversity?
- 3-Define of the following a) Keystone species.b) Indicator species c) Indicator species
- 4- Explain the methods of measuring Biodiversity

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Good Luck





Assiut University  
Faculty of Science  
Zoology Department

Principles of Insect Pest Control  
For Entomology Student  
Second Semester/June/2016

Time: 2 hour  
Level: Third  
Course Code: 442E

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**Answer the following questions (50 marks)**

**First Question:** (10 Marks)

Write short notes on **Five** only of the following explaining their importance in insect pest control.

- |                  |               |                    |
|------------------|---------------|--------------------|
| a) Crop rotation | b) Sanitation | c) Antibiosis      |
| d) DDT           | e) Neem       | f) Chemosterilants |

**Second Question:** (10 Marks)

- a) Explain the roles of insect pheromones in insect pest control.
- b) What does IGRs mean? Explain their types and roles in insect pest control.
- c) Explain the role of hand picking and barriers in mechanical control.

**Third Question:** (12 Marks)

**(A) If you are planning to plant a cotton crop and after two months you found symptoms of an infestation with unknown insect pest. Answer the following questions:**

- a) What is the first step you have to do? Explain how can this step help you to develop a good pest control strategy?
- b) When will you make a decision to start controlling the pest?
- c) Describe pest monitoring and explain how it can be important to your pest control strategy.
- d) Which control method are you planning to use?
- e) If your control method failed to lower the pest infestation, what will you do?
- f) What can you do to keep the pest you are trying to control from becoming resistant to the insecticides you use?



**(B) Define Ten only the following terms** **(5 Marks)**

Continuous pest, Biopesticide, Bt corn, Trap cropping, Botanical insecticides, ETL, Entomopathogenic fungi, Herbicides, Insect Pest, Stomach insecticides, Cultural control and Quarantine.

**Fourth Question:**

**(A) Compare between each pair of the following** **(4 Marks)**

1. Insect repellent and antifeedants
2. Multiparasitism and Superparasitism
3. Egg parasitoid and Egg-larval parasitoid
4. Systemic insecticide and residual insecticides

**B) Complete the following sentences** **(9 Marks)**

1. The insecticides are classified according to the mode of entry into....., ....., and.....and according to the mode of action they are classified into ....., ....., and.....
2. The mode of action of Ops and natural pyrethroids is to inhibit....., and ....., respectively.
3. Natural control includes.....,....., and .....
4. The physical control involves the use of .....,....., and .....to control insect pest.
5. The practices of cultural control include .....,....., and.....
6. To use Knippling's sterile male technique to control insect pest, these pests should have the following criteria: .....,.....,....., and.....
7. The failure of pesticide application might be due to.....,.....,....., and....
8. The disadvantages of insecticides are.....,.....,....., and.....
9. The steps of IPM are .....,.....,....., and.....
10. The goals of insect pest control are. ....,....., and .....

**With my best wishes**

**By Dr. Ali Mohamed Ali**