

الإجابة النموذجية لإمتحان اللاقاريات ٢٢١ ح  
(نصف ورقة إمتحانية)

كلية: العلوم

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المستوى: الثانى

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تاريخ الإمتحان: ٢٠١٤ / ١٢ / ٢١

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## Group (B)

I- Choose the correct answer:

(12 Mark)

- 1. The middle layer in the shell of a mollusc is composed of \_\_\_\_\_.**
  - a. Conchiolin.
  - b. Horizontal lamellae of calcium carbonate.
  - c. Fibers called sponging.
  - d. Vertical arranged crystals of calcium carbonate.
- 2. In Mollusca, the heart often includes \_\_\_\_\_.**
  - a. 2-chambered.
  - b. 3-chambered.
  - c. 4-chambered.
  - d. 5-chambered.
- 3. In Mollusca, excretion often takes place by \_\_\_\_\_.**
  - a. diffusion through the skin.
  - b. one coelomic kidney.
  - c. two coelomic kidneys.
  - d. None of the previous.
- 4. In Mollusca, the shell is secreted by \_\_\_\_\_.**
  - a. the mantle.
  - b. the headfoot.
  - c. the pedal gland.
  - d. the digestive gland.
- 5. Which of the following is suitable habitat for members of the Mollusca?**
  - a. Marine.
  - b. Freshwater.
  - c. Terrestrial.
  - d. All of the above are suitable for some members of the Mollusca.
- 6. The larva of *Ancanthochiton* is called \_\_\_\_\_.**
  - a. planula.
  - b. trochophore.
  - c. veliger.
  - d. glochidium
- 7. *Eremina* shell is \_\_\_\_\_.**
  - a. clockwise referred to as dextral.
  - b. clockwise referred to as sinistral.
  - c. counter clockwise referred to as dextral.
  - d. counter clockwise referred to as sinistral.
- 8. Which of the following molluscs has eyes on the same plan of vertebrates?**
  - a. Chiton.
  - b. Helix.
  - c. Clam.
  - d. Squid.
- 9. In the desert snail, the \_\_\_\_\_ fertilization occurs \_\_\_\_\_ snail.**
  - a. cross- between two.
  - b. cross- in one.
  - c. self- between two.
  - d. Self- in one.
- 10. Pearls are developed in certain species of clams as a protection against some bodies, those happen to enter in \_\_\_\_\_.**
  - a. the gills.
  - b. inhalant siphon.
  - c. between the mantle and the foot.
  - d. between the mantle and the shell.
- 11. The gills of the fresh water clam are responsible for \_\_\_\_\_.**
  - a. respiration and locomotion.
  - b. respiration and food collection.
  - c. respiration and excretion.
  - d. None of the above.
- 12. The larva of *Anodonta* is called \_\_\_\_\_.**
  - a. planula.
  - b. trochophore.
  - c. veliger.
  - d. glochidium.
- 13. The nervous system of squid is \_\_\_\_\_.**
  - a. primitive.
  - b. highly developed.
  - c. composed of network of unpolarized nerve cells.

d. None of the above.

14. The shell of the cuttlefish is \_\_\_\_\_.

- a. internal.      b. external.      c. there is no shell.      d. none of the previous.

15. Most reproduction in echinoderms is \_\_\_\_\_.

- a. hermaphroditic.      b. sexual and internal.  
c. sexual and external.      d. asexual by fragmentation.

16. The sea star has \_\_\_\_\_ coelomic cavity.

- a. one.      b. two.      c. three.      d. four.

17. The nervous system of echinoderms is \_\_\_\_\_.

- a. primitive.      b. more advanced.      c. ganglionated.      d. none of the previous.

18. In echinoderms, water enters the water vascular system through the \_\_\_\_\_.

- a. ampullae.      b. ring canal.      c. madreporite.      d. radial canals.

19. In Echinodermata, the anus \_\_\_\_\_.

- a. is absent.      b. present in an oral surface.      c. present in an aboral surface.  
d. All of the above are present in some members of the Echinodermata.

20. Which of the following is suitable habitat for members of the Echinodermata?

- a. Marinewater.      b. Freshwater.      c. Terrestrial.  
d. All of the above are suitable for some members of the Echinodermata.

21. The body of Echinodermata is \_\_\_\_\_.

- a. diploblastic.      b. unsegmented.      c. acoelomate.      d. segmented.

22. Which of the following is an example of class Asterozoa?

- a. Sea cucumber.      b. Sea urchin.      c. Sea star.      d. Brittle star.

23. Each sex of the sea star has \_\_\_\_\_ pairs of gonads.

- a. three.      b. four.      c. five.      d. six.

24. The tube feet have all the following functions EXCEPT \_\_\_\_\_.

- a. locomotion.      b. food capture.      c. respiration.      d. reproduction.

II- Write about the following:

(12 Mark)

1. Nervous system of *Acanthochiton*.
2. Circulatory system of *Anodonta*.
3. Reproductive system of *Astropecten*.

## Answers

### Q. I:

1- d	2- b	3- c	4- a	5- d	6- b	7- a	8- d
9- a	10- d	11- b	12- d	13- b	14- a	15- c	16- c
17- a	18- c	19- d	20- a	21- b	22- c	23- c	24- d

### Q. II:

#### **1. Nervous system of *Acanthochiton***

The nervous system is primitive and non-ganglionated. It consists of a circumoesophageal nerve ring from which two pairs longitudinal nerve cords pass backwards, a pair of pedal nerve cord into the foot and a pair of pleural nerve cord along the mantle edge. There are no eyes, and statocysts are very reduced.

#### **2. Circulatory system of *Anodonta***

The circulatory system is of the open type as in other molluscs. The heart consists of one ventricle and two auricles, all are enclosed in the pericardial cavity. Blood leaves the ventricle in an anterior aorta and a posterior one. The fine branches of these aorta open in blood lacunae within the different tissues. From these lacunae, blood collects in the main haemocoelic cavity, from which it passed to the kidneys then to the gills and returned back to the auricles. Blood from the mantle is returned directly to the heart.

#### **3. Reproductive system of *Astropecten***

The gonads consist of a pair of strands in each arm from which the germ cells are proliferated so that they come to be contained in thin walled sacs hanging in the coelom. They vary greatly in size according to the season and at maturity may occupy a considerable portion of the perivisceral space.

The gonads of each arm discharge to the exterior by fine pores situated at the junction of the arms with the disk. The sexes are separate and approximately equal

in numbers and the germ cells are discharged freely into the sea where fertilization takes place and leads to the formation of a characteristic larva. At first this is bilaterally symmetrical and relatively simple and is known as a bipinnaria, later the bipinnaria develops very complex ciliated bands before settling down and metamorphosing into the adult radially symmetrical form.