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University Examinations 2023/2024

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN MEDICAL MICROBIOLOGY

HMM 3124: INVERTEBRATE ZOOLOGY

DATE: APRIL 2024

TIME: 2 HOURS

INSTRUCTIONS: Answer all questions in sections A and B and any other two questions in Section C

1. The following statements are true about protozoa EXCEPT ONE:

- A. Protozoans are single celled organisms
- B. Protozoans are either free living or parasites
- C. Protozoans lack a cell wall
- D. Protozoans are generally heterotrophic
- E. Protozoans divide by fission, schizogony budding

2. One of the following is not a phylum of protozoa:

- A. Sarcomastigophora
- B. Myxospora
- C. Flagospora
- D. Aicomplexa
- E. Ascetospora

3. Regarding coccidian, circle the wrong statement:

- A. Coccidia belong to the phylum Apicomplexa
 - B. Coccidia are protozoan parasites of mammals, birds and reptiles
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- C. Coccidia is a protozoa
 - D. Coccidia have three major life cycle including sporogony, schizogony and gametogony
 - E. Coccidia belong to the class Sarcomastigophora
4. The following statements are true about protozoa EXCEPT ONE:
- A. Protozoa have lower concentration of nitrogen in their cells than bacteria they eat
 - B. Contractile vacuole is the excretory organ that collects water from cytoplasm and removes it from the cell
 - C. Balantidium coli is the largest ciliate protozoan that infects humans who are typically accidental hosts after fecal/oral exposure
 - D. Respiration in protozoa is accomplished by the diffusion of dissolved gases through the cell membrane
 - E. Flagellates have micronucleus and macronucleus
5. The following insects are familiar pests or disease carriers EXCEPT ONE:
- A. Butterflies
 - B. Bed bugs
 - C. Mosquitoes
 - D. Houseflies
 - E. Japanese beetles
6. Insects are extremely diverse, one of the following match with its group:
- A. Flies - Coleoptera
 - B. True bugs - Hemiptera
 - C. Butterflies and moths Hymenoptera
 - D. Wasps - Lepidoptera
 - E. Beetles - Diptera
7. Wasps belong to one of the following groups:
- A. Hemiptera
 - B. Lepidoptera
 - C. Diptera
 - D. Hymenoptera
 - E. Coleoptera

8. Identified somatic cell types in protozoa perform all the following functions EXCEPT ONE:
- A. Respiration
 - B. Stimulus perception
 - C. Locomotion
 - D. Reproduction
 - E. Nutrition uptake
9. The following statements are true about asexual cycle in porifera EXCEPT ONE:
- A. Asexual reproduction is through budding
 - B. Many fresh water porifera form gemmules that act as overwintering devices
 - C. Gemmules contain spores that undergoes asexual phase in porifera
 - D. Gemmules are made up of amoebocytes surrounded by a layer of spicules
 - E. When the environment becomes less hostile, the gemmules resumes growing
10. The following statements are true about syconoid EXCEPT ONE:
- A. They have tubular body with a single osculum but the body wall is thicker and complex
 - B. They usually form highly branched colonies
 - C. Their food is ingested by the choanocytes
 - D. Water enters through a large number of dermal ostia into incurrent canals and then filters through prosopyles into radial canals
 - E. They contain choanocytes-lined radial canals that empty into the spongocoel
11. The following are examples of Cnidaria EXCEPT ONE:
- A. Jelly fish
 - B. Sand bugs
 - C. Hydroids
 - D. Sea anemones
 - E. Corals
12. The following are characteristics of Cnidaria EXCEPT ONE:
- A. Hydra are Cnidaria that are found in fresh water
 - B. Polyp and Medusa are two different forms of Cnidaria
 - C. Polyp is bell or umbrella shaped with mouth down alignment
 - D. Body wall comprises of stinging cells referred to as Cnidocytes

- E. Coelenterons helps in digestion and circulation
- 13- Cnidarians are classified into four categories EXCEPT ONE:
- A. Corazoa
 - B. Anthrozoa
 - C. Scyphozoa
 - D. Cubozoa
 - E. Hydrozoa
14. The corals, sea anemones and sea pens belong in one of the categories of Cnidarians among the following:
- A. Corazoa
 - B. Anthrozoa
 - C. Scyphozoa
 - D. Cubozoa
 - E. Hydrozoa
15. The following are classes of porifera EXCEPT ONE:
- A. Calcarea
 - B. Hexactenellida
 - C. Demospongiae
 - D. Hydroliida
 - E. Seirospongiae
16. The following are examples of Ctenophora EXCEPT ONE:
- A. Pleurobranchia
 - B. Beroe
 - C. Mnemiopsis
 - D. Bolinopsis
 - E. Lepoe
17. The following true statements about reproduction in Placozoans EXCEPT ONE:
- A. Placozoans reproduce exclusively by fission whereby two parts of the animal move away from each other until their connection is ruptured
 - B. Placozoans are occasionally bisexual reproduction

- C. Placozoans may undergo unusual three daughter fission of Placozoans mother specimen
 - D. The life cycle include binary fission and swarmer budding modes of vegetative reproduction
 - E. Placozoans give rise to larvae that swims freely
18. The following statements are true about Archaeocyatha EXCEPT ONE:
- A. They can be categorized by their densely layered calcite skeletons lacking spicules
 - B. They are extinct, sessile, reef-building marine sponges
 - C. Diversification of the demosponges was suggested to have led to their extinction
 - D. They inhabited shallow seas around the coast of the continents
 - E. Their organization is consistent with that of living sponges
19. The following statements are true about Platyhelminthes EXCEPT ONE:
- A. They are triploblastic, acoelomate, and bilaterally symmetrical.
 - B. They may be free-living or parasites.
 - C. The body has a soft covering with or without Cilia.
 - D. Their body is dorsoventrally flattened without any segments and appears like a leaf.
 - E. The body is covered with or without flagella
20. One of the following worms in Platyhelminthes is the dog tape worm:
- A. Taenia saginata
 - B. Fasciola hepatica
 - C. Echinococcus granulosus
 - D. Schistosoma mansoni
 - E. Opistorchis nana

SECTION TWO

QUESTION ONE

Briefly describe the following in insects;

- | | |
|------------------|-----------|
| (a) Egg stage | (5 Marks) |
| (b) Larvae stage | (5 Marks) |
| (c) Pupa stage | (5 Marks) |
| (d) Imago stage | (5 Marks) |

QUESTION TWO

Briefly write on the Economic Importance of porifera (5 marks)

QUESTION THREE

Draw and briefly write about the structural parts of amoeboid protozoa (5 marks)

SECTION THREE

QUESTION ONE

Illustrate and explain the differences between ameba, ciliates and flagellates (20 marks)

QUESTION TWO

Explain the characteristics of Platyhelminthes and give examples (20 marks)

QUESTION THREE

Explain the characteristics of Cnidaria (20 marks)

QUESTION FOUR

Briefly write on acoelomates (5 marks)

QUESTION FIVE

List any five worms under Platyhelminthes (5 marks)