

REV-01  
MSZ/18/23

2023/06

**M.Sc. ZOOLOGY**  
**FOURTH SEMESTER**  
**ENTOMOLOGY-II: INSECT PHYSIOLOGY &**  
**ECONOMIC ENTOMOLOGY**  
**MSZ-402 D**

**SET**  
**B**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

( Objective )

Time: 30 mins.

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

- Insect blood does not carry:
  - Nutrition
  - Hormone
  - Sugar
  - Oxygen
- Which one of the following natural enemies is use as 'biological pesticides'?
  - Predators
  - Parasites
  - Disease producing microbes
  - Hyper-parasites
- Pesticides that are not metabolized inside the body stored in the:
  - Heart
  - Lung
  - Muscles
  - Fatty tissues
- Which one of the following types of mosquito laid eggs in a cluster?
  - Anopheles
  - Culex
  - Aedes
  - All of the above
- Which one of the following substances insect cannot produce in the body?
  - Triglyceride
  - Trehelose
  - Steroid
  - Albumin
- In the digestive system, Filter Chamber is present in the insects having:
  - Sucking type of mouth parts
  - Chewing type of mouth parts
  - Lapping type of mouth parts
  - None of the above
- An internal respiratory system of air tubes in the Cockroach is known as:
  - Tracheal system
  - Nervous system
  - Circulatory system
  - None of the above
- Insect immunity include:
  - Mechanical response
  - Humoral response
  - Cell mediated response
  - All of the above
- Drones of honey bee produced from:
  - Fertilized eggs
  - Unfertilized eggs
  - Both fertilized and unfertilized eggs
  - None of the above
- The distal ends of the Malpighian tubules are held in contact with the rectal wall by the perinephric membrane, is termed as:
  - Holonephry
  - Cryptonephry
  - Oligonephry
  - All of the above

11. Motor neurons transmit impulse from:
  - a. Sense organ to brain
  - b. Brain to effector organs
  - c. Effector organ to interneuron
  - d. All of the above
12. Insecticides that are applied to the food of the pest & enter through the mouth are under the category of:
  - a. Contact poison
  - b. Fumigants
  - c. Stomach poison
  - d. Systemic toxicants
13. Fumigants enter in insect body through:
  - a. Mouth
  - b. Body cuticle
  - c. Reproductive system
  - d. Respiratory system
14. Dengue fever is a:
  - a. Fungal disease
  - b. Viral disease
  - c. Protozoan disease
  - d. Bacterial disease
15. Which one of the following is an inhibitory transmitter of nerve impulse?
  - a. Acetylcholine
  - b. L-Glutamic acid
  - c. Gamma-amino butyric acid (GABA)
  - d. Dopamine
16. In which gut region of Insect, the cuticular lining is absent?
  - a. Foregut
  - b. Midgut
  - c. Hindgut
  - d. All of the above
17. In Insects, digestion and absorption takes place in:
  - a. Crop
  - b. Gizzard
  - c. Hepatic caeca
  - d. Malpighian tubule
18. In insects, air enters the body through:
  - a. Lungs
  - b. Skin
  - c. Spiracle
  - d. Gill
19. Gonad is:
  - a. Ectodermal origin
  - b. Mesodermal origin
  - c. Endodermal origin
  - d. None of the above
20. Mechanical grinding of food takes place:
  - a. Crop
  - b. Malpighian tubule
  - c. Gizzard
  - d. Hepatic caecum

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**( Descriptive )**

Time : 2 hr. 30 mins.

Marks : 50

[ Answer question no.1 & any four (4) from the rest ]

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|--|----------|
| 1. Write short notes on: ( <i>any two</i> )  | 5×2=10   |
| a) Accessory pulsatile organs  |          |
| b) Tsetse fly as vector of diseases  |          |
| c) Defoliators and Suckers   |          |
| d) Autocidal pest control methods  |          |
| 2. Write in details about the microanatomy of brain.   | 10       |
| 3. Write the structures and functions of different types of haemocytes.  | 5+5=10   |
| 4. What do you mean by the word 'management' instead of 'control' of pest? Discuss the physical methods of pest control.                 | 2+8=10   |
| 5. Explain about Insect immunity. Describe about Toll signalling pathway.  | 5+5=10   |
| 6. What are the different types of ovarioles found in insect? Explain with suitable diagram.   | 8+2=10   |
| 7. Write about digestive system of insect with a labelled diagram. What is the significance of bacterial chamber present in termite gut? | 6+2+2=10 |
| 8. Describe about tracheal respiration in insects. What are the other modes of respiration in insects?                                   | 5+5=10   |

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