M.Sc. ZOOLOGY
Fourth Semester (Repeat)
PHYSIOLOGY, ECONOMIC ENTOMOLOGY & INSECT ECOLOGY
(MSZ – 402 D)

Duration: 3Hrs. **Full Marks: 70**

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins. **Marks: 50**

1. Answer the following in brief (any *five*): **2×5=10**

a) State the significance of Quarantine.

b) Describe in brief about Goblet Cells of Insect.

c) Write in brief about Plastron found in insects.

d) Write about Rectal Pads found in insects.

e) Describe about Filter Chamber of insects.

f) Discuss drawbacks of chemical control.

g) Prepare a list of pests of Teak. Mention the order of each pest.

2. Answer the following questions (any *five*): **3×5=15**

a) Describe the different types of Spiracles.

b) Describe the Basic Nephridial system.

c) What do mean by pest. What are the major types of pest?

d) Describe the Basic Nephridial system.

e) What is biological significance of immunity in insects?

f) Describe the mode of transmission of parasite from sandfly to man.

g) Discuss Biological control of pest with suitable examples.

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Duration: 20 minutes **Marks – 20**

(PART A - Objective Type)

I. Choose the correct answer: **1×20=20**

1. Malpihian tubules develop at the junction of:
   (a) Foregut & Midgut (b) Midgut & Hindgut
   (c) Foregut & Hindgut (d) None

2. Salivary Glands of insects present in the:
   (a) Mouth parts (b) Thoracic region
   (c) Abdomen region (d) None

3. Excretory product in aquatic insects is:
   (a) Uric acid (b) Urea
   (c) Ammonia (d) Xanthine

4. First ganglion of central nervous system is:
   (a) Prothoracic ganglion (b) Sub oesophageal ganglion
   (c) Hypocerebral ganglion (d) Frontal ganglion

5. Spiracles of thoracic region present in:
   (a) only Prothorax (b) Pro-thorax & Mesothorax
   (c) Mesothorax & Metathorax (d) only Metathorax

6. Aquatic insects respire by:
   (a) Plastron (b) Tracheal gills
   (c) Siphon with terminal spiracle (d) All above

7. Glucose is absorbed in insects by:
   (a) Active transport (b) Osmosis
   (c) Passive transport (d) None is true

8. Respiratory System of aquatic insects possesses:
   (a) Open type (b) Closed type
   (c) Both open or closed (d) either open or closed

9. Trophocytes are present in germarium in:
   (a) Polytrophic ovarioles (b) Telotrophicovarioles
   (c) Atrophic ovarioles (d) None is true

10. Yolk proteins (Vitellogenins) are synthesized in:
    (a) Hemocytes (b) Bursa copulatrix
    (c) Fat body (d) Trophocytes

11. *Sogatellafurcifera* is the pest of:
    (a) Sugarcane (b) Cotton
    (c) Jute (d) Paddy

12. Army worm, *Mythimnaseparata* belong to order:
    (a) Lepidoptera (b) Hemiptera
    (c) Coleoptera (d) Diptera

13. DDT is:
    (a) Chlorinated hydrocarbon (b) synthetic pyrethroid
    (c) Organophosphorus insecticide (d) Carbamate insecticide

14. Systemic insecticides can control:
    (a) Hemipterans (b) Hymenopterans
    (c) Dragonflies (d) Carnivorous insects

15. Sleeping sickness is caused by:
    (a) Sandfly (b) House fly
    (c) Black fly (d) Tsetse fly

16. Lectins are related to:
    (a) Humoral Immunity (b) Cellular encapsulation
    (c) Nodule formation (d) Cellular Immunity

17. Predominant phagocytic cells are:
    (a) Oenocytoids (b) Plasmatocytes
    (c) Granulocytes (d) Prohemocytes

18. *Tribolium castanium* is a:
    (a) Vegetable pest (b) Tea pest
    (c) Jute pest (d) Stored grain pest

19. Corpora pedunculata is found in:
    (a) Protocerebrum (b) Deutocerebrum
    (c) Tritocerebrum (d) Optic lobe

20. *Antharea assamensis* belongs to the order:
    (a) Hymenoptera (b) Coleoptera
    (c) Lepidoptera (d) Diptera

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