

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

(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

[PART-A: Objective]

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1X20=20

1. Part of the insect brain involved in all intelligent activities is-
 - a. Pons cerebralis
 - b. Corpus centrale
 - c. Corpus pedunculatum
 - d. Corpus ventralia
2. The first insect appears in the corpse is-
 - a. Hide beetle
 - b. Carpet beetle
 - c. Blow fly
 - d. Moth larva
3. Bamboo pest, *Dinoderus minutus* spent their pupal stage on-
 - a. Soil
 - b. Leaf
 - c. Root
 - d. Larval tunnel
4. Which one of the following is an oligophagous pest?
 - a. Citrus butterfly
 - b. Brinjal borer
 - c. Locust
 - d. Rice weevil
5. *Pyrilla perpusilla* is the pest of -
 - a. Cotton
 - b. Paddy
 - c. Sugarcane
 - d. Stored grain
6. Insect blood is slightly bluish due to the presence of -
 - a. Iron
 - b. Sodium
 - c. Copper
 - d. Manganese
7. *Dysdercus cingulatus* is the pest of -
 - a. Stored grain
 - b. Bamboo
 - c. Sugarcane
 - d. Cotton
8. Vector of dengue virus is -
 - a. Anopheles mosquito
 - b. Culex mosquito
 - c. Aedes mosquito
 - d. Sand fly
9. Kala azar disease is caused by -
 - a. Black fly
 - b. Sand fly
 - c. Tse tse fly
 - d. Culex Mosquito

10. Which one of the following pest control method is essential for prevention of pest to spread over the globe?
 a Biological method
 c Chemical method
 b Autocidal method
 d Quarantine method
11. Mechanical grinding of food takes place in-
 a. Crop
 c. Proventriculus
 b. Hepatic caecum
 d. Malpighian tubule
12. The valve present between foregut and midgut is known as-
 a. Stomodaeal valve
 c. Gastric caeca
 b. Pyloric valve
 d. None of the above
13. Excretory product of aquatic insect is-
 a. Ammonia
 c. Urea
 b. Uric acid
 d. All of the above
14. The distal ends of the Malpighian tubules are held in contact with the rectal wall by the perinephric membrane, is termed as-
 a. Holonephry
 c. Oligonephry
 b. Cryptonephry
 d. All of the above
15. PAMPS are found in-
 a. Insect's Body
 c. In pathogen.
 b. In hemocyte
 d. In hemolymph
16. Which is not included in male reproductive system?
 a Spermatophore
 c. Sperm sac
 b Spermatheca
 d Spermaticid
17. Aedeagus is-
 a. Male reproductive organ
 c. Female reproductive organ
 b. Egg laying apparatus
 d. Defensive organ
18. In some insects the sperms are indirectly transferred by enclosing the sperm in the tiny capsules, called
 a. Spermatheca
 c. Spermatozoa
 b Spermatophore
 d. Spermaticcord
19. The pigment present in insect blood is-
 a. Hemoglobin
 c. Hemerythrin
 b. Hemocyanin
 d. None of the above
20. In the respiratory system of insects, the trachea that opens to outside by small holes, are known as-
 a. Labrum
 c. Mandibles
 b. Spiracles
 d. Valves

(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

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

1. Describe different cultural measures to control pests in an agricultural field. 10
2. Classify neurons. Describe the transmission of nerve impulse in insect. 4+6=10
3. Describe the life cycle of a forensic insect in a corpse. Mention the various stages of insect succession in a corpse. 5+5=10
4. Write a note on life cycle and damage done by any one of forest pest. 7+3=10
5. What are the nitrogenous excretory products? Explain different organs of excretion in insects with suitable diagram 2+6+2
=10
6. Describe digestive system of insect with labelled diagram. 7+3=10
7. Write short note (*Any two*) 5+5=10
 - a. Filter chamber
 - b. Toll signaling pathway
 - c. Tracheal respiration
8. Explain different types of ovarioles found in insects with suitable diagram. 7+3=10

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[3]