

M.Sc. ZOOLOGY
FOURTH SEMESTER
ENTOMOLOGY-II
MSZ-402 D

(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. The basic functional unit of nervous system is-
a. Neuron
b. Axon
c. Glial cell
d. Synapse
2. Perennially occurring persistent pest species of agro-ecosystem is-
a. Potential pest
b. Key pest
c. Migratory pest
d. Occasional pest
3. The part of the plant destroyed by sal borer (*Hoplocerambyx spinicornis*) is-
a. Leaf
b. Root
c. Seed
d. Heartwood
4. In insect body, ionizing radiation can cause-
a. Death
b. Sterility
c. Stomach disorder
d. Paralysis
5. Pesticides in the form of fumigant enter the insect body through-
a. Cuticle
b. Mouth
c. Respiratory tract
d. Bristles
6. Insects that appear in a corpse at final stage of decomposition/dry stage are-
a. Dipteran fly
b. Hymenoptera
c. Coleopteran beetle
d. Lepidopteran moth
7. In a testis all the gametes undergoing a particular stage of spermatogenesis are often grouped together to form-
a. Cyst
b. Sperm bundle
c. Scrotum
d. Ectadenia
8. One of the important antimicrobial peptide is-
a. Cecropins
b. Lectins
c. Proteinase
d. Integrins
9. Cellular response of immunity is performed by-
a. Fatbody
b. Antiviral proteins
c. Haemocytes
d. Immunoelectins
10. Most broadly acting and robust antiviral pathway in insect is-
a. Toll pathway
b. Imd pathway
c. RNAi pathway
d. Integrin pathway

11. In some insects, the distal end of the Malpighian tubules is closely associated or inserted into the rectum called-
- Basic nephridial system
 - Rectonephridial system
 - Cryptonephridial system
 - Crypto-recto nephridial system
12. In a filter chamber, when anterior part of hindgut makes close contact with hind part of oesophagus by coiling spirally around one another, known as-
- Mambranicidae
 - Psyllidae
 - Cercopidae
 - Coccidae
13. In insect cellulose is confined to-
- Fore gut
 - Midgut
 - Hindgut
 - All of the above
14. When tracheal system consisting of 8 pairs of spiracles (the mesothoracic & 7 abdominal) are functional called-
- Holopneustic tracheal system
 - Hemipneustic tracheal system
 - Peripneustic tracheal system
 - Proneustic tracheal system
15. The spiracle bear two external openings which also secondarily developed while the primary atrial orifice is closed in-
- Atriate spiracle
 - Bichambered spiracle
 - Biferous spiracle
 - Multiferous spiracle
16. *Dysdercus cingulatus* is a-
- Cotton pest
 - Tea pest
 - Paddy pest
 - Stored grain pest
17. *Phlebotomus* spp. cause-
- Leishmaniasis
 - Tuberculosis
 - Elephantiasis
 - Sleeping sickness
18. Germarium of testicular follicle contain-
- Spermatozoa
 - Primary spermatocyte
 - Secondary spermatocyte
 - Primary spermatogonia
19. Which of the following is not true?
- In pedogenesis only pseudolegs develop.
 - In hermaphroditism both male and female gonads develop.
 - In polyembryony more than one larva develops from a single egg.
 - In parthenogenesis embryo develops from unfertilized egg.
20. Which is not included in male reproductive system?
- Spermatophore
 - Sperm sac
 - Spermatheca
 - Spermatid

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[PART-B : Descriptive]

Time : 2 hrs. 40 min.

Marks : 50

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

- Write short notes: (*any two*) 5+5=10
 - Forensic importance of blow flies (*Calliphora* spp.).
 - Systemic immune response.
 - Different types of filter chambers in insect.
- Describe the anatomical organization of tracheal system in insect. 10
- Write about the types of haemocytes found in the haemolymph of insect and mention their functions. 5+5=10
- Describe the different types of ovarioles found in insect with suitable diagram. 7+3=10
- Describe microanatomy of insect brain with a neat diagram. 8+2=10
- Describe the mechanism of excretion in insects. 10
- What do you mean by biological methods of pest control? Mention its applications on the crop fields. 2+8=10
- What is antibacterial immunity? Elaborate the biological significance of insect immunity. 5+5=10

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