REV-00
MSZ/16/22

2015/12

M.Sc. ZOOLOGY
Third Semester
ENTOMOLOGY
(MSZ – 13 D)

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

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

(PART-B: Descriptive)

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

Answer any *five of* the following questions:

1. Describe the structure of the piercing sucking mouth parts with the help of a suitable sketch. Write about the feeding mechanism of different types of piercing sucking mouth parts. (5+5=10)
2. Give a detailed account of the ultra-structure of insect cuticle with a neat labeled diagram. Write the function of insect cuticle. (6+4=10)
3. What are the different types of muscles found in insects? Describe the structure and function of insect muscle. (2+4+4=10)
4. Describe the structure and functions of compound eye of insects. Draw the necessary neat sketches. (5+3+2=10)
5. Describe synchronous and asynchronous muscles of insects. (5+5=10)
6. What is metamorphosis? Mention different types of metamorphosis found in insects. How hormones control the metamorphosis? (2+3+5=10)
7. Describe the different types of legs found in insects with suitable diagram. (10)

PTO

8. Write notes on:

a) Properties of insect pheromones and their functions. (3½ +3½=7)

b) Poison glands in insects. (3)

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Duration: 20 minutes **Marks – 20**

PART-A (Objective)

Time: 20 mins **Total Marks: 20**

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

1. The last segment of head is
   (a) Labral (b) Mandibular
   (c) Maxillary (d) Labial

2. Rasping-Sucking type of mouth parts is the intermediate between
   (a) Chewing-bitting and chewing-lapping type.
   (b) Chewing-lapping and piercing-sucking type.
   (c) Chewing type and siphoning type.
   (d) Chewing-bitting and piercing-sucking type.

3. The hormone helps in sclerotization is.....
   (a) Eclosion (b) Bursicon
   (c) Prothoracicotropic (d) Allatotropic

4. Which layer of the epicuticle serves as a water proof layer of the intequment of insects?
   (a) Cement Layer (b) Cuticular Layer
   (c) The Wax Layer (d) Chitinous Layer

5. White ants are under order
   (a) Hymenoptera (b) Isoptera
   (c) Coleoptera (d) Diptera

6. In Diptera, the hind wing becomes wholly modified as sense organ called
   (a) Bristles (b) Wing base
   (c) Haltere (d) Pectine

7. Forewings modified to "Elytra" in order
   (a) Dermaptera (b) Protura
   (c) Coleptera (d) Trichoptera

8. 'Semiloopers' has
   (a) Three pairs of abdominal legs (b) Two pairs of abdominal legs
   (c) Four pairs of abdominal legs (d) Five pairs of abdominal legs

9. The hormone that initiates hardening and darkening of cuticle in the insect is
   (a) Bursicon (b) Eclosion
   (c) Neuro hormone (d) PTTH

10. In locusts, the muscle is the firing of the motor nerve very variable in its timing by the muscle that varies the twisting of the forewings to control lift of flight. It is the
   (a) Pleuro-basalar muscle (b) Dorso-ventral muscle
   (c) Mesothoracic basalar muscle (d) Meso thoracic Subalar muscle

11. Which type of metamorphosis is found is Hymenoptran insect?
   (a) Heterometabola (b) Hypermetabola
   (c) Holometabola (d) Homometabola

12. Alary muscles are present in-
   (a) Brain (b) Heart
   (c) Wings (d) Mouth parts

13. Compound eye of insect is composed of certain similar repetitive units called-
   (a) Lens (b) Rhabdome
   (c) Cone cells (d) Ommatidia

14. The leg segment between trochanter and tibia is
   (a) Tarsus (b) Coxa
   (c) Femur (d) Pretarsus

15. Chitin synthesis is controlled by
   (a) 20 - hydroxyecdysone (b) Glucosamine
   (c) 20 - hydroxyacelylamine (d) Hydroxyecdysone

16. In most of the Orthopteroid insect, a median lobe fond in between the terminal claws called
   (a) Arolium (b) Empodium
   (c) Pulvilli (d) Coxa

17. Insects eggs are
   (a) Microlecithal (b) Iso lecithal
   (c) Contro Lecithal (d) Mesolecithal

18. The cerci are modified into stout forceps or pincers in order
   (a) Dermaptera (b) Protura
   (c) Odonata (d) Collembola

19. Corpora allata secrets
   (a) Molting hormone (b) Juvenile hormone
   (c) Allatotropin hormone (d) ADH

20. 'Halters' helps houseflies in
   (a) Sound production (b) Osmoregulation
   (c) Balancing (d) Respiration

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