

KERALA AGRICULTURAL UNIVERSITY

B.Sc (Ag) 2004 Admission

**One Time Supplementary Examination,
Final Examination, March 2017**

Course Code Ento. 1201

Marks: 60.00

Title: Fundamentals of Entomology (2+1)

Time: 2 ½ hours

I) A. Fill up the blanks

(10x0.5=10)

1. The arthropod group with two pairs of antennae and at least five pairs of legs are
2. Author of books 'Indian Insect Pests' and 'Indian Insect Life' is
3. The most evolved insect order
4. The naked obtect pupa of a butterfly is called as
5. Wing articulation sclerites are called as
6. Abdominal appendages retinaculum and furcula are present in order
7. The second antennal segment pedicel carries a chordotonal organ called as
8. The part of foregut which serves as a storage organ in insects
9. The body cavity of insect is called as
10. The type of respiratory system wherein none of the spiracles are functional are called as

B. True or False

(5x0.5=2.5)

1. The function of spermatheca is to produce spermatophores
2. Trophallaxis is seen in order Lepidoptera
3. Anamorphosis is a characteristic of collembolans
4. Ptilinum is a characteristic of order Diptera
5. If the level of JH is high insect moults into pupa

C. Match the following

(5x0.5=2.5)

- | | |
|---------------------|----------------|
| 1. Bristle tails | a. Dictyoptera |
| 2. Crickets | b. Chrysopidae |
| 3. Network wings | c. Gryllidae |
| 4. Leaf footed bugs | d. Thysanura |
| 5. Stalked eggs | e. Coreidae |

II) Write short notes/answers (Any 14)

(14 x1 = 14)

1. Family Gryllotalpidae
2. Order Thysanoptera
3. Prothoracic glands
4. Paedogenesis
5. Halteres
6. Structure of insect antenna
7. Opisthognathous insect head
8. Mouthparts of Order Lepidoptera
9. Filter chamber
10. Stadia and instar
11. Setae

12. Plastron respiration
13. Malpighian tubules
14. Tentorium
15. Hypermetamorphosis
16. Suborder Mantodea

III) Answer any eight questions

(8x2 = 16)

1. Structure of insect cuticle
2. Spiracles
3. Insect neurons
4. Characters of order Neuroptera
5. Frenate wing coupling
6. Dipteran piercing and sucking type of mouth parts
7. Suture/Sulci of insect head
8. Suborders of Odonata
9. Cleavage and germ band formation in insect embryogenesis
10. Fruit flies vs. swallow tails

IV) Write Essay on any FIVE

(5x4=20)

1. Insects are the largest animal phyla and one of the most successful group of organisms. Justify?
2. Draw a typical digestive system, label it and explain the parts.
3. Describe a typical insect leg along with its modifications
4. Give the characters of order Hymenoptera, its economic importance and give the characters of economically important families
5. Central nervous system of insects
6. Characters of Order Hemiptera along with the characters of economically important families
