

KERALA AGRICULTURAL UNIVERSITY
B.Sc.(Hons.) Agriculture – 2010 Admission - Ist Semester
Final Examination – March/April 2011

Cat. No. : Ento 1101 •
Title : Insect Morphology, Physiology and Systematics (1+1)

Max. marks: 80
Time : 3 hours

- I A Fill in the blanks** 4
1. The major excretory organ in terrestrial insect is _____.
 2. The last part of foregut is known as _____.
 3. Moulting fluid contains _____ and _____ enzymes.
 4. Humeral angle is formed between _____ and _____ margins of the wing.
 5. _____ type head inclination is found in bugs.
 6. _____ is social and polymorphic insect.

- B Match the following** 3
- | GROUP - A | GROUP - B |
|-------------------------------|--------------------|
| (a) Johnston's organ | 1. Water beetle |
| (b) Naiads | 2. Lemon butterfly |
| (c) Natatorial leg | 3. Silverfish |
| (d) Median caudal filaments | 4. Honey bee |
| (e) Siphoning mouth parts | 5. Male mosquito |
| (f) Hamuli | 6. Dragonfly |

- C State whether the following statements are TRUE or FALSE** 3
1. Larvae of coleopteran insect is called maggots.
 2. Fusion of head and thorax forms pterothorax
 3. T.B.Fletcher was the first Entomologist to Government of Madras state
 4. Cholera disease is transmitted by tse tse fly.
 5. Whitefly is a true fly.
 6. Mandible is the appendages of fourth segment of insect head

- II A Define/Explain the following terms** 5
- | | |
|---------------|------------------|
| 1. Cervix | 2. Morphology |
| 3. Haemolymph | 4. Sclerite |
| 5. Cranium | 6. Instar |
| 7. Digestion | 8. Palpiger |
| 9. Aorta | 10. Paedogenesis |

- B Classify the following insects into their Natural Order giving Three important characters** 5
- | | | |
|----------------|------------|-----------|
| 1. Leaf insect | 2. Termite | 3. Aphids |
| 4. Spring tail | 5. Antlion | |

III

Answer the following/ ^{define} (ANY TEN)

20

1. Draw a diagram of typical insect leg and label it.
2. Chemoreceptors
3. Structure of maxilla
4. Filter chamber
5. Enlist various types of modification of wings with giving suitable examples.
6. International rules of zoological nomenclature.
7. How cuticle is useful to the insect ?
8. Describe the structure of chewing-lapping type mouth parts of honey bee.
9. How insects are our enemy ?
10. Blood gills
11. Male reproductive system of insect
12. Classify the respiratory system on the basis of number and arrangement of spiracles.

IV

Write short notes on the following (ANY FOUR)

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1. Explain the process of ecdysis in insect with appropriate diagram.
2. Describe the structure of circulatory system with the help of neat and clean diagram.
3. Classify the various types of neuron based on their structure and function.
4. Enlist various types of insect mouth parts with suitable examples. Describe the structure of mouth parts found in cockroach
5. Enlist various types of wing coupling apparatus and describe the structure of amplexiform type wing coupling.
6. Draw a sketch of typical insect antenna and label it. Enlist various types of antenna found in insects giving suitable examples.

V

Write an essay on the following (ANY TWO)

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1. Discuss the various factors responsible for the dominance of insect in animal kingdom
2. Draw a labeled diagram of insect body wall / integument and describe the function of each parts.
3. Describe the general structure of digestive system of insect in detail with line diagram.

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