

KERALA AGRICULTURAL UNIVERSITY
B.Sc (Hons.) Agriculture Programme – 2011 Admission
Ist Semester Final Examination – February / March 2012

Title : Ento 1101

Marks : 80

Course : Insect Morphology, Physiology and Systematics (2+1) Time : 3 Hours

I. Fill in the blanks

(10 x 1=10)

1. An insect without antenna _____.
2. Bead like antennae is seen in _____.
3. Spiral thickening of intima in the trachea is called _____.
4. _____ is the epidermal cell which forms the seta.
5. Rasping and sucking type of mouthparts seen in _____.
6. _____ is the unpaired upper facial part of the insect head.
7. _____ is the number of stylets present in the mouthpart of female mosquito.
8. In _____ type of head the long axis is horizontal or slightly inclined ventrally, while the mouth parts are anterior in position.
9. Fore leg is _____ type in praying mantids.
10. Tympanum is an _____ organ.

II. Write short notes / answers on following. (ANY TEN)

(10 x 3= 30)

1. Accessory pulsatile organ.
2. Malpighian tubule.
3. Important taxonomic characters of order Coleoptera.
4. Structure of spiracles.
5. Male reproductive system of insect.
6. Enlist various types of antenna with suitable diagrams and examples.
7. Significance of cuticle to the insect.
8. Typical alimentary canal of an insect with diagram.
9. Types of larvae with examples.
10. Modification of legs in honey bees.
11. Differentiate between Tingidae and Miridae.
12. Differentiate between Chrysomelidae and Cerambycidae.

III. Write short essays on ANY SIX of the following

(6 x 5= 30)

1. What is moulting? Why moulting is necessary? Explain the process of moulting and formation of new cuticle in insects with appropriate diagram.
2. Classify the respiratory system of insects on the basis of number and arrangement of spiracles.
3. What is the importance of hemipterans in agriculture? Differentiate between suborder homoptera and suborder heteroptera.
4. Enlist various types of insect mouthparts with suitable examples. Describe in detail the structure of mouthparts found in red cotton bug.
5. Draw a diagram of archetypal venation and explain briefly different types of wing modification in insects with examples.
6. Draw a sketch of typical insect leg and label it. Enlist various types of leg modifications found in insects giving suitable examples.
7. International Code on Zoological Nomenclature.
8. Systematics and its components.

IV. Write essay on ANY ONE

(1 X 10= 10)

1. Endocrine system and endocrine glands in insects.
2. How structural perfection in insects facilitated their dominance in the animal kingdom on other creatures on this earth?.