

M.Sc. (Ag.) Examination, 2016

Semester-I

Subject: Plant Protection

Course No.: AEN-501

Insect Morphology

Time: Three Hours

Full Marks: 50

Questions are of value as indicated in the margin

Answer any five questions

1. State briefly the sclerites and sutures present in a general insect head. How structure and function of mouthparts are adapted for sucking up fluids differ in bugs and mosquitoes? 5+5=10
2. What are the articular sclerites of insect wing? Narrate with necessary diagram. Describe briefly the basic veins of a hypothetical wing venation with diagram. 5+5=10
3. How many segments are present in an insect abdomen? Describe briefly the abdominal appendages in adult insects with their modifications and functions. 2+4+4=10
4. Describe the structure of insect body wall with a labelled diagram. Briefly discuss the different cuticular processes and appendages. 5+5=10
5. Write notes on **any two** of the following : 5×2=10
 - a) Structure and modification of insect leg
 - b) Function of body wall
 - c) Wing coupling mechanism
 - d) Types of antenna
6. Answer the following in brief (**any four**) : 2.5×4=10
 - a) Tentorium in insect head.
 - b) How Collembola jumps?
 - c) Describe different sulci in the thoracic region.
 - d) What are the main features that distinguish the true Insecta from the Hexapoda?
 - e) Visual sense organs in insects.
 - f) Why morphological studies in Insects is necessary?
7. Write short notes on **any four** of the following : 2.5×4=10
 - a) Pleural apophysis
 - b) Paranotal theory of wing development
 - c) Modification of insect wings
 - d) Pollen basket
 - e) Prolegs
 - f) Physical colouration of insect cuticle
8. Distinguish the following (**any four**) : 2.5×4=10
 - a) Suture and sulcus
 - b) Anamorphic and epimorphic development
 - c) Epiproct and paraproct
 - d) Tergum and sternum
 - e) Haltere and pseudohaltere
 - f) Apodeme and Apophysis

