

M.Sc.(Ag.) Semester – I Examination, 2014

Plant Protection

Course : AEN – 502 (Insect Anatomy, Physiology and Nutrition)

Time: 3 Hours

Full Marks: 50

Questions are of value as indicated in the margin

Answer **any five** questions

1. Describe the organs of circulation of blood in insect body. Give an account of insect blood. Explain the physiology of blood circulation. 2+4+4=10
 2. Define diapause. What are the different types of metamorphosis found in insects? Give an account of types of larva and pupa with an example for each. 1+3+6=10
 3. Describe the role of vitamins, proteins, amino acids and minerals in insect nutrition. What do you understand by artificial diet? Explain carbohydrate metabolism. 6+1+3=10
 4. Describe the male reproductive system of an insect. Give an account of spermatogenesis. Explain the terms viviparity, ^{exo}pathogenesis and polyembryony. 3.5+3.5+3=10
 5. Briefly describe the different types of sense organs present in insect. 10
 6. What are the different organs of respiration? Classify the respiratory system based on functional spiracles. Explain the mode of respiration in aquatic and endoparasitic insects. 4+2+4=10
 7. (a) Describe with a diagram the transmission of nerve impulse at synaptic junction.
(b) Explain the histology of foregut and midgut. 5+5=10
 8. Write short notes on **any four** of the following: 2.5×4=10
 - (a) Filter chamber
 - (b) Principal organs of excretion
 - (c) Oogenesis
 - (d) Chitin synthesis
 - (e) Neuron and ganglia
 - (f) Corpora cardiaca and corpora allata
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