

2022

ZOOLOGY — HONOURS

Paper : DSE-A-2

(Biology of Insects)

Full Marks : 50

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer *any ten* questions.

1. Explain the term 'antixenosis' in plants. How insects defend themselves from plant secondary metabolites? 1+4
2. What are different types of insect head based on the inclination of long axis of head and orientation of mouth parts? Briefly describe them with suitable examples. 5
3. Write short notes on clasporial and cursorial appendages in insects with suitable examples. What are tergum, sternum and pleuron? 2+3
4. What are dorsal ocelli? Mention the structure of ommatidia with suitable diagram. 3+2
5. Illustrate the basic structure of central nervous system of cockroach with proper diagram. 5
6. Write the systematic position of plant lice, book lice and bird lice. Differentiate between their mouth parts. 3+2
7. What do you mean by integrated vector management? Write a note on the symptoms of Japanese Encephalites with clinical diagnosis. 2+1½+1½
8. Differentiate between holometabolous and hemimetabolous insects with examples. Briefly describe the endocrine regulation of metamorphosis in any holometabolous insect. 1½+3½
9. What do you mean by eusocialism? Explain the sociality in termites according to their castes. 2+3
10. Characterize 'dead heart' and 'white ear' of damaged paddy. Write the control measures of the pests responsible for above damages. 2½+2½
11. What do you mean by insect-plant interaction and how it is measured? How plant volatiles play important role in insect-plant interaction? 3+2

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12. Mention the chemical composition of insect saliva. Describe the role of salivary glands in insect digestion. 2+3
 13. Drawing a flow diagram, briefly describe tissue diffusion by tracheoles during resting and active stage of an insect. 5
 14. What do you mean by Dengue virus complex? Write a short note on Dengue virus vector distribution in West Bengal, Symptoms and Clinical diagnosis. 5
 15. What is altruism? How castes are determined during embryonic development of honeybees? 5
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