

U.G. 6th Semester Examination - 2022

ZOOLOGY

[HONOURS]

Discipline Specific Elective (DSE)

Course Code : ZOOL-H-DSE-T-06

Full Marks : 40

Time : 2½ Hours

The figures in the right-hand margin indicate marks.

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

1. Answer any **five** questions: 2×5=10
- Write down the chemical composition of insect 'Cuticle'.
 - What is the role of 'Enterocytes' in insect gut?
 - How alimentary tract of an insect acts as an immunological organ?
 - What is 'Flexion lines'?
 - What is 'Halteres'? State its function.
 - What do you mean by 'Wing kinematics'?
 - What is 'Hemocoelic insemination'? Where it is seen?
 - What is Endoparasitoid? Cite example.

2. Answer any **two** questions: 5×2=10
- Write a short note on 'Pigmentation of insect integument'.
 - Write down the salient features of 'Ephemeroptera' and 'Hymenoptera'. 2½+2½
 - Describe the effect of pH and temperature on specific enzymatic digestion within insect gut. 2½+2½
 - Briefly describe the structure of a typical insect neuron with diagram. Mention the signal transduction process via insect nervous system. 2½+2½
3. Answer any **two** questions: 10×2=20
- Describe the wing coupling mechanisms involving the jugal and humeral region of the wings with labelled diagram. Add a note on different types of Sensilla on the insect wings with proper diagram. (4+2)+(3+1)
 - What is oviposition? Illuminate the mechanism of 'Enhancement of female oviposition' in different insects. Add a note on control of vitellogenin synthesis and yolk accumulation in insects. 2+4+4

- c) Describe and draw (with labelled diagram) the segmentation of the insect head. What is 'Moniliform' antennae? Where it is found? Draw a diagram of Moniliform antennae. 6+(2+1+1)
- d) Describe the mechanics and control of feeding in connection with different types of insect mouth parts. Add a note on 'Sensilla on Mouth parts'.

$$(3\frac{1}{2}+3\frac{1}{2})+3$$
