

**U.G. 6th Semester Examination - 2021**

**ZOOLOGY**

[HONOURS]

**Discipline Specific Elective (DSE)**

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

**(Biology of Insecta)**

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 of the following :  $2 \times 5 = 10$
- What is periphallid organ?
  - Distinguish between exopterygote and endopterygote insect.
  - Draw and describe the different parts of a typical antenna.
  - Write short notes on peritrophic membrane.
  - Write down the salient features of class Insecta.
  - Comment on Trophallaxis.
  - Discuss the positive effects of allelochemical in insects.
  - Distinguish between diapause and hibernation.

[Turn Over]

2. Answer any **two** questions of the following:  $5 \times 2 = 10$
- Briefly describe a typical male genitalia in insect with diagram. 5
  - What is the difference between ectognathous and entognathous mouth parts? Describe a typical spongin type of mouthparts with suitable diagram. 2+3=5
  - Explain why insect diversity is so rich as compared to other animal groups in Indian scenario. Discuss the role of secondary plant metabolites in insect plant interactions. 2+3=5
  - Mention the modifications of antennae in :
    - Butterfly,
    - Cockroach  $2 \frac{1}{2} \times 2 = 5$
3. Answer any **two** questions of the following:  $10 \times 2 = 20$
- What do you mean by 'Critical period' in the event of insect metamorphosis? Schematically represent the neuroendocrine regulatory pathways for insect metamorphosis. Comment on the role of JH hormone in insect metamorphosis. 2+6+2=10
  - Describe with diagram a typical insect leg. Write down the function of legs modified for

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fossorial, saltatorial, raptorial and natatorial purposes of life stages.  $2+8=10$

c) State the diagnostic characters of the order to which the following insect belong :

i) Spring Tail

ii) Butterfly

iii) White Ant

iv) Sand Fly  $2\frac{1}{2} \times 4 = 10$

d) What is the role of microorganism in digestive process in insect. Write a note on filter chamber in insects. Describe the different types of ovarioles in insects.  $4+2+4=10$

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