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3 (Sem-6/CBCS) ZOO HE 1

2025

## ZOOLOGY

(Honours Elective)

Paper : ZOO-HE-6016

**(Biology of Insecta)**

Full Marks : 60

Time : Three hours

***The figures in the margin indicate full marks for the questions.***

1. Choose the correct option :  $1 \times 7 = 7$

(i) Termites have \_\_\_\_\_ type of antennae.

(a) Moniliform

(b) Filiform

(c) Plumose

(d) Serrate

(ii) 'Costa' is a part of

(a) Antenna

(b) Mouth

(c) Wing venation

(d) Thorax

(iii) Siphoning type of mouthparts are found in

- (a) Butterfly
- (b) Housefly
- (c) Mosquitoes
- (d) Honey bee

(iv) The thorax of insects has \_\_\_\_\_ segments.

- (a) two
- (b) three
- (c) four
- (d) five

(v) Halteres are found in—

- (a) Coleoptera
- (b) Orthoptera
- (c) Diptera
- (d) Hemiptera

(vi) \_\_\_\_\_ absorbs nitrogenous waste from haemolymph.

- (a) Haemocytes
- (b) Oenocytes
- (c) Malpighian body
- (d) Rectum

(vii) Complete metamorphosis is found in—

- (a) Grasshopper
- (b) Silverfish
- (c) Dragonfly
- (d) Butterfly

2. Answer the following questions :  $2 \times 4 = 8$

- (i) What are the primary parts of the insect mouth ?
- (ii) Distinguish between simple eyes and compound eyes of insects.
- (iii) What is plastron ?
- (iv) Mention the function of Haemolymph in insects.

3. Answer the following questions : (**any three**)

$5 \times 3 = 15$

- (i) Distinguish between hemimetabolous and holometabolous metamorphosis.
- (ii) Write about the abdominal structures of insects.
- (iii) Describe the raptorial type of legs of insects.
- (iv) What is *corpora allata* ? What hormone does it secrete ? Mention its functions.

$1 + 1 + 3 = 5$



- (v) What are reasons for the fact that insects are a dominant group of animals?

4. Answer the following questions : (*any three*)

$10 \times 3 = 30$

- (i) What are the important characteristics of social organisation in insects? Write about the social behaviour of *any one* insect.

- (ii) What do you mean by plant-insect interactions? Describe plant defence mechanisms and adaptation of insects to plant defences.  $2 + 8 = 10$

- (iii) Describe the following type of mouth parts of insects with labelled diagrams :

(a) Biting and chewing type

(b) Piercing and sucking type

$5 + 5 = 10$

- (iv) Describe the digestive system of insects.

- (v) What are the different types of sense organs in insects? Describe Mechano-receptors and Chemoreceptors.

- (vi) Write the distinctive characters of the orders *Coleoptera*, *Diptera*, *Lepidoptera* and *Hymenoptera* with examples.

$2\frac{1}{2} \times 4 = 10$