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**BRAINWARE UNIVERSITY**

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398, Ramkrishnapur Road, Barasat
Kolkata, West Bengal-700125

Term End Examination 2025-2026**Programme – B.Sc.(Ag)-Hons-2025****Course Name – Fundamentals of Entomology****Course Code - BAG27106(T)****(Semester II)****Full Marks : 40****Time : 2:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 10=10

1. Choose the correct alternative from the following :

- (i) Which taxonomic class includes insects?
 - a) Insecta
 - b) Arachnida
 - c) Crustacea
 - d) Chilopoda
- (ii) Which family includes ladybird beetles used as predators?
 - a) Chrysomelidae
 - b) Curculionidae
 - c) Coccinellidae
 - d) Cerambycidae
- (iii) Explain how moulting supports insect growth.
 - a) It allows shedding of rigid cuticle to permit expansion
 - b) It converts larva into adult directly
 - c) It prevents water loss completely
 - d) It replaces respiration
- (iv) Classify insect legs as cursorial based on function.
 - a) Running
 - b) Jumping
 - c) Digging
 - d) Swimming
- (v) Which endocrine gland secretes juvenile hormone (JH)?
 - a) Corpora allata
 - b) Prothoracic glands
 - c) Salivary glands
 - d) Fat body
- (vi) Distinguish larva and pupa in holometabolous insects.
 - a) Larva is feeding stage; pupa is transformation stage
 - b) Larva is non-feeding; pupa is feeding
 - c) Both are adults
 - d) Both are eggs
- (vii) Explain the meaning of 'species' in taxonomy.
 - a) Any insects sharing a host plant
 - b) All insects in a family
 - c) All insects in an order
 - d) A reproductively isolated group of interbreeding populations
- (viii) Analyze which trait most strongly supports assignment to Lepidoptera.
 - a) Elytra and rostrum
 - b) Halteres and sponging mouthparts

- c) Fringed wings and rasping-sucking
- d) Scaled wings and coiled proboscis
- (ix) Evaluate the importance of sensory organs in host location.
 - a) They digest cellulose
 - b) They detect chemical/physical cues that guide orientation and feeding
 - c) They excrete nitrogen
 - d) They form cuticle layers
- (x) Design a framework to categorize crop pests by economic importance.
 - a) Use colour categories only
 - b) Use wing-count categories only
 - c) Use antenna-length categories only
 - d) Use key, regular, occasional, and minor categories based on loss and frequency

Group-B

(Short Answer Type Questions)

2.5 x
10=25

2. Illustrate the characteristics of class Insecta. (2.5)
3. Classify the phylum Arthropoda upto class level with examples. (2.5)
4. Explain in brief about Hemimetabola and Paurometabola. (2.5)
5. List down the characters of the order Diptera. (2.5)
6. List the three tagmata of an insect body and write one diagnostic feature for each. (2.5)
7. List the three major regions of the alimentary canal and write one function of each. (2.5)
8. Name the primary moulting hormone and the gland responsible for its secretion. (2.5)
9. List the main stages of complete metamorphosis. (2.5)
10. Illustrate the major environmental factors that influence insect populations in an ecosystem. (2.5)
11. Identify the effects of air pressure, wind and air currents, and edaphic factors on insects. (2.5)

OR

Identify the different categories of pests. (2.5)

Group-C

(Long Answer Type Questions)

5 x 1=5

12. Briefly explain the structure and modifications of insect antennae with suitable diagrams. (5)

OR

Explain different types of reproduction found in insects. (5)

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