3 (Sem–6/CBCS) ZOO HE 1/2

2022

ZOOLOGY

(Honours Elective)

Answer the Questions from any one Option.

OPTION–A

(Biology of Insecta)

Paper : ZOO–HE–6016

OPTION–B

(Fish and Fisheries)

Paper : ZOO–HE–6026

Full Marks : 60

Time : Three hours

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

OPTION–A

(Biology of Insecta)

Paper : ZOO–HE–6016

1. Choose the correct option : (Answer ***any seven*** questions) 1×7=7

   (i) Which of the following is not a characteristic of insects ?

   (a) Presence of ventral nerve cord.

   (b) Three pairs of jointed legs.

   (c) Body divisible into cephalothorax and abdomen.

   (d) Excretion by Malpighian tubules.

   (ii) Moniliform antennae is found in

   (a) Termites

   (b) Ants

   (c) Grasshoppers

   (d) Dragonflies

   (iii) The units of compound eyes in insects are

   (a) Ocelli

   (b) Ommatidia

   (c) Rhabdoms

   (d) Crystalline cones

(iv) The presence of two wings only is the characteristic of

(a) Dipterans

(b) Orthopterans

(c) Hemipterans

(d) Hymenopterans

(v) Crop is completely separated as a lateral diverticulum in the alimentary canal of

(a) Cockroach

(b) Beetle

(c) Housefly

(d) Termite

(vi) The primitive type of mouthpart from which other types developed in insects is

(a) Biting and chewing type

(b) Piercing and sucking type

(c) Siphoning type

(d) Chewing-lapping type

(vii) Spermatheca is found in

(a) Male reproductive system

(b) Female reproductive system

(c) Spermatophores

(d) Colleterial glands

(viii) Which of the following represents holometabolous metamorphosis ?

(a) Egg → larva → adult

(b) Egg → pupa → larva → adult

(c) Egg → larva → pupa → adult

(d) Egg → larva → pupa

(ix) Waggle dance for communication is performed by —

(a) Alate termites

(b) Drone honeybees

(c) Queen honeybee

(d) Forager worker honeybees

(x) Which of the following acts as vector for dengue fever ?

(a) *Culex Pipiens*

(b) *Aedes aegypti*

(c) *Anopheles spp*

(d) *Culex tarsalis*

2. Answer the following questions : ***(any four)*** 2×4=8

(i) Why is epicranial suture known as ecdysial cleavage line ?

(ii) Mention *any two* differences between aristate and stylate antennae.

(iii) Name the parts which are modified to form stylets in 'Piercing and sucking' type of mouthparts.

(iv) What is plastron in insects ? Mention its function.

(v) What are nephrocytes ? Mention their function.

(vi) What is hemimetamorphosis ? Give *one* example.

(vii) Name the hormone produced by prothoracic glands of insects and mention its *one* function.

(viii) What is procuticle ?

3. Answer the following questions : ***(any three)*** 5×3=15

(i) How do phytophagous insects select host plants ?

(ii) Describe the 'chewing and lapping' type of mouthparts in insects.

(iii) Write the functions of haemolymph in insects.

(iv) Describe briefly the mechanism of excretion in insects.

(v) Write briefly about the structure of wings in insects with a labelled diagram.

(vi) Why are mosquitoes considered as important insect-vectors ? Explain.

(vii) How does digestion of carbohydrates take place in insects ?

(viii) Give a detailed structure of an ommatidium with a labelled diagram.

4. Answer the following questions : ***(any three)*** 10×3=30

(i) Describe the male reproductive system of any insect with a labelled diagram. Mention the role of different parts in the system. 7+3=10

(ii) Describe the anatomy of various parts of the alimentary canal of insects with labelled diagrams.

(iii) Give an account of different types of legs in insects with their modification and adaptions.

(iv) Describe the social characteristics of insects with special reference to honeybees.

(v) What do you mean by open circulatory system ? Describe the structure and function of circulatory system in insects. 1+9=10

(vi) Describe the role of allelochemicals in insects-host plant mediation or interaction.

(vii) Give an account of central nervous system of insects with labelled diagrams.

(viii) Describe the structure and function of tracheal system of insects.
