

1 (Sem-5/FYUGP) ZLG 44 MJ

2 0 2 5

ZOOLOGY

(Major)

Paper : ZLG0500404

(Entomology and Fisheries)

Full Marks : 45

Time : 2 hours

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

1. Choose the correct option : 1×5=5

(a) Insects are characterized by having

(i) three pairs of legs and three body regions

(ii) two pairs of legs and three body regions

(iii) three pairs of legs and two pairs of antennae

(iv) three pairs of legs and four body regions

(b) Siphoning type of mouthpart is found in

(i) mosquitoes (ii) cockroaches

(iii) grasshoppers (iv) butterflies

(2)

- (c) *Labeo rohita* (Rohu) is an omnivore and according to its feeding zone it is
- (i) surface feeder
 - (ii) column feeder
 - (iii) bottom feeder
 - (iv) All of the above
- (d) In extensive fish culture, the main source of food for fish is
- (i) artificial feed
 - (ii) natural plankton and detritus
 - (iii) mixed diet
 - (iv) chemical fertilizers
- (e) Soft bodied insects and immature life stages of the insect pests are preserved in
- (i) 70–75% ethyl alcohol
 - (ii) glycerine
 - (iii) 5% formalin
 - (iv) All of the above

2. Answer the following questions (any *five*) :

2×5=10

- (a) What is meant by a plant pest? Mention any two ways by which insects damage plants.
- (b) Differentiate between Apterygota and Pterygota.

(3)

- (c) Write about impact of climate change on marine fisheries.
- (d) What do you mean by pollen basket?
- (e) Name the different types of scales found in fishes based on their morphology and development.
- (f) Mention the role of swim bladder in buoyancy.
- (g) Define intensive fish culture.
- (h) Distinguish between pen culture and cage culture.
- (i) Name two important Fisheries Acts.
- (j) Briefly write about the role of insects as vectors of human diseases.

3. Answer the following questions (any four) :

5×4=20

- (a) Distinguish between Chondrichthyes and Osteichthyes with examples.
- (b) Explain the role of insects in pollination with suitable examples.
- (c) Write about the application of GIS and Remote Sensing in fisheries resource management.
- (d) Discuss the biological and structural factors responsible for the success of insects on earth.

(4)

- (e) Give an account of the major byproducts obtained from the fishery industry along with their uses in various fields.
- (f) Describe the structure of the insect integument with proper diagram.
- (g) What is metamorphosis? Illustrate the role of hormones in insect moulting.
- (h) Why Zebrafish is considered as an ideal organism in scientific research?

4. Answer the following question (any one) : 10

- (a) Describe the collection and preservation techniques of insects used in entomological studies and write about their scientific importance.
- (b) Discuss in detail the structure and function of compound eyes in insects with appropriate diagrams.
- (c) What do you mean by induced breeding? Explain the techniques and methods used in induced breeding of Indian major carps. Add a note on advantages of induced breeding.
- (d) Give an account of the different types of fishing gears and crafts of India along with their mode of operation.

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