Total number of printed pages = 5

63/2(SEM-3) ZOO-304

2022

(Held in 2023)

ZOOLOGY

(Theory Paper)

Paper Code : ZOO-304

(Applied Entomology and Fishery)

Full Marks – 80

Pass Marks – 32

Time – Three hours

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

1. Answer the following Multiple choice Questions (*all* compulsory) : 1×6=6

(a) Fins found in the trouts (Salmonidae), smelts (Osmeridae), lantern fishes (Myctophidae), and various catfish which are fleshy, dorsal appendage located between the dorsal and caudal fins toward the caudal peduncle are also known as

(i) Lepidotrichia (ii) Homocercal fins

(iii) Adipose fins (iv) Ceratotrichia

[Turn over

(b) Which of the following is not true about *Artemia* ?

(i) They are important group of Phytoplankton

(ii) Use as live food in the aquarium fish, marine finfish and crustacean larval culture.

(iii) Its biggest advantage is that one can produce live food on demand from dry and storable powder.

(iv) It has high nutritive value and high conversion efficiency.

(c) Which one of the following is an exotic fish species of India ?

(i) *Salmo salar* (ii) *Labeo rohita*

(iii) *Tor tor* (iv) *Puntius sophore*

(d) Saltatorial type of leges are found in which of the following insects ?

(i) Butterflies (ii) Dragonflies

(iii) Grasshopper (iv) Honey bees



(e) Johnston's organ is located in which of the following parts of antenna ?

(i) Pedicel (ii) Scape

(iii) Flagellum (iv) None of them

(f) Physogastry is the phenomenon of

(i) Enormous enlargement of abdomen of termite's queen

(ii) Enormous enlargement of abdomen of honey bees queen

(iii) Enormous enlargement of abdomen of ant's queen

(iv) None of them

2. Answer the following Short Questions (*all* compulsory) : 2×5=10

(a) What is the characteristic of lepidotrichia types of fins in fish ?

(b) Give the location and function of gill rakers and hard fin rays.

(c) What are advantages of hybridization techniques in fish culture ?

(d) What do you mean by trophallaxis ?

(e) Differentiate between pterygota and apterygota.

3. Answer any *six* of the following questions : 5×6=30

(a) Write the relationship between length and weight of fish ? What are the factors on which the length-weight relationship of fish depend ? 2+3=5

(b) Explain the different types of prey capture methods in fish.

(c) Write a short note on fishery by-products and its applications.

(d) What are 'live gene banks'? Enumerate their role in conservation of fish resources.

(e) Describe briefly the role of insects as pollinator.

(f) Write short note on beneficial parasitic insects.

(g) Name three types of blood sucking lice present in human body. Distinguish between the head louse and public louse. 1½+3½=5

(h) Mention about the symptoms and control measures of American trypanosomiasis.

(i) Distinguish between the Anopheles and Aedes mosquitos.



4. Answer any *two* of the following Long answer type questions : 10×2=20

(a) What are 'live feed organisms' of fish ? Give examples. Explain the diversity and significance of live food organisms in fish nutrition. 10

(b) Write the important characteristics of estuarine fishery. Describe the major estuarine fishery resources of India. 5+5=10

(c) Describe briefly about the life history, medical importance and control of Cimex *lectularius*. 4+3+3=10

5. Answer any *one* of the following Very long type Questions. 14×1=14

(a) Describe the application of satellite remote sensing in fisheries. Explain the different types of tagging and marking techniques used for fish catching and management. 6+8=14

(b) What do you mean by IPM ? Mention the different types of pest management tools used in IPM. Describe briefly the role of insects as a potential biological controlling agent with suitable example. 3+3+8=14