

2015
ZOOLOGY
Paper : 304

**ENTOMOLOGY, AQUATIC BIOLOGY
AND FISHERIES**

Full Marks : 80
Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Select the correct options (any eight): 1x8=8
- i. Cryopreservation of fish gametes and embryos is an important aspect of
 - a) Ex-situ conservation of germplasm resources
 - b) In-situ conservation of germplasm resources
 - c) Both are correct
 - d) both are false
 - ii. Euryhaline marine organism refers to
 - a) Extend their distribution from the sea to the upper reach of the estuary
 - b) They can tolerate salinity as low as 15%
 - c) Form the majority of the total estuarine biota
 - d) All the above.

- iii. Which of the following an exotic ornamental fish
- Glossogobius giuris
 - Badis badis
 - Cyprinus carpio
 - Colisa fasciatus
- iv. Thermocline is a zone which
- Is a feature of tropical lakes
 - Does not limit the distribution of warm water and cold water fishes.
 - It acts as an effective barrier for any vertical exchange of O_2 from epilimnion to hypolimnion .
 - All the above
- v. The productivity of lake is chiefly regulated by
- Natural productivity of lake water
 - Natural food to fish
 - Degree of water pollution
 - All the above
- vi. Which one of the following is a protozoan disease
- Pebrine
 - Flacheries
 - Grasseri
 - Muscardine
- vii. Silverfish is belongs to the order of
- Protura

(2)

P.T.O.

- Thysanura
 - Hymenoptera
 - Diptera
- viii. Among the four types of malaria which one is most wide-spread in the tropical region
- P. vivax*
 - P. falciparum*
 - P. malariae*
 - P. ovale*
- ix. The major constituents of lac is
- Woody matters
 - Resin
 - Wax
 - Sugar
- x. Dengue is caused by
- Pediculus humanus*
 - Anopheles
 - Glossina* sp.
 - Andes aegypti*

2. Answer the following questions (any five): 2x5=10

- Explain why estuarine ecosystem is called transition zone?
Give two examples of estuarine biota.
- How do you classify the pond based on productivity?
- Write about the transgenic fish and their impact on local

(3)

P.T.O.

population.

- iv. What is swarming?
- v. Write the difference between predatory and parasitic insects.
- vi. Write the commercial use of lac.
3. Answer the following questions (any four): $5 \times 4 = 20$
- i. Explain the characteristic features of brackish water and their importance to capture fishery.
- ii. Discuss the fish germplasm diversity of North East India and their conservation strategy.
- iii. Discuss the classification of plankton and give example of common phytoplankton of Indian rivers.
- iv. Write the disease and control measure caused by stableflies.
- v. Describe the prophylaxis of malaria.
4. Answer the following (any two): $9 \times 2 = 18$
- i. Describe the ornamental fish resources of NE India and also state the conservation and management strategy for development of ornamental fisheries. $3 + 6 = 9$
- ii. What do you mean by global water balance? Discuss the conservation and management strategies of water resources for use of aquatic communities. $3 + 3 + 3 = 9$
- iii. Briefly describe the role of insects in weed management.

9

(4)

P.T.O.

5. Answer the following (any two): $12 \times 2 = 24$
- i. What do you mean by aquatic productivity? Describe the principle and measurement technique of primary and secondary productivity? $2 + 5 + 5 = 12$
- ii. Give the concept of live gene bank of fish species and also state the important role of it in conservation of desired fish species. $5 + 7 = 12$
- iii. Give the classification of class insecta upto order with suitable examples. 12

— × —