

1. Answer the following questions.

[1 mark]

1. Study of fishes means.....

- a) Icnology.
- b) Lepidopteriology.
- c) Ichthyology.
- d) genecology.

2. Complete monthed fishers includes.....

- a) Dipnoi.
- b) Teleostomi.
- c) Elasmobranchii.
- d) Holocephalic.

3. All are carps except.....

- a) Labeo.
- b) Catla.
- c) Mystus.
- d) Cyprian's

4. Isinglass is prepared from.....

- a) Ichthyophis.
- b) musk deer.
- c) fishes.
- d) Lizards'.

5. One of the following is not fish preservation.

- a) Canning.
- b) Freezing
- c) Landing.
- d) Smoking.

6. In India the fresh water fishery fall in to.....

- a) one riverine system
- b) Five reverine system.
- c) two riverine system.
- d) Reservoirs system.

7. Inland fisheries adversely affected due to

- a) Introduction of exotic fishes.
- b) Industrialization & urbanization.
- c) application of Scientific methods.
- d) Culture fishery.

8. Fishing by artificial method is

- a) Capture fishery.
- b) culture fishing.
- c) Estuarine fishing.
- d) Revering fishing.

9. Reservoir fishery has attracted attention because it.....

- a) hold great production potential.
- b) management ecology oriented.

- c) measures of control.
 - d) implementation of above all.
10. It is causing immense damage to fisheries..
- a) Sericulture.
 - b) Indiscriminate.
 - c) In land fishery.
 - d) poly culture.
11. It's a great boon by introducing.....
- a) construction of dams.
 - b) Some exotic fishes.
 - c) aquatic pollution.
 - d) Cold water fisheries.
12. In the national agriculture export the fishing shares is.....
- a) 40%
 - b) 18%
 - c) 10%
 - d) 50 %
13. Among the estuarine cat fishes the most important species are.....
- a) Arius sp.
 - b) Mystic.
 - c) wallago.
 - d) above all.
14. One of the adverse effect on the fish fauna is due to.....
- a) Capture fishes.
 - b) Inland capture.
 - c) Anthropogenic activities.
 - d) Hatching.
15. It disturbs the natural living of fish in aquatic bodies.....
- a) Air pollution.
 - b) chemical pollution of water.
 - c) Sound pollution.
 - d) Light rays.

2. Answer the following questions within 2-3 sentences.

[1.5 mark]

1. How did Acanthodians go extinct ?
2. Mention evolutionary significance of placoderms.
3. What is sustainable aquaculture ?\
4. What are the 3 general types of sonic mechanisms present in fishes?
5. What are the types of electric organs in fish ?
6. Give the structure of electric organ in fish .
7. Mention functions of electric organs in fishes.
8. What is bioluminescence in fishes ? What are its advantages ?
9. Mention structure of poison gland in a fish ?
10. State about poisonous fishes.
11. What is natural breeding of Indian major carps ?
12. Mention factors responsible for natural breeding .
13. State techniques of breeding .
14. What is induced breeding ?

15. State about fresh water culture in India.
16. Mention freshwater fisheries in India.
17. What is the importance of freshwater fish culture?
18. Mention status of Indian marine fishes.
19. What is the importance of marine fisheries in India ?
20. Describe about marine fisheries in Odisha.

3. Answer the following questions within 75-100 words.

[2 marks]

1. What are the unique characters of Acanthodians?
2. What are the important characters of Placoderms ?
3. What is the need of sustainable aquaculture ?
4. State about extensive culture of fish.
5. State about semi-extensive culture of fish.
6. State about intensive culture of fish.
7. What is pen culture ?
8. What is cage culture ?
9. What do you mean by composite fish culture ?
10. State about role of water quality in aquaculture .
11. Mention symptoms of fish diseases.
12. Mention about causes of fish diseases.
13. State steps to control fish diseases.
14. How larvivorous fishes are used in malaria control ?
15. Which larvivorous fishes are found in India ?
16. Name some exotic fishes introduced to India.
17. State some characteristics of Bradyodonti.
18. Mention about origin and evolution of Elasmobranchi.
19. State some characteristics of Elasmobranchi.
20. Mention phylogenetic significance of Acanthodians.

4. Answer the following questions within 500 words.

[6marks]

1. Classify fish with distinguish characters and important examples of principal sub-divisions.
2. Give the phylogenetic significance of Acanthodians and placoderms.
3. Write short note on evolution and adaptive radiation of chondrichthyes , Elasmobranchi and Bradyodonti.
4. What is the sound production mechanism in fishes ?
5. What are types of electric fishes ? Give the location , structure and function of electric organs.
6. Give the physiology and biological significance of luminescence.
7. Write short note on poisonous fishes and their poisonous apparatus.
8. Give an account on natural breeding of Indian major carps.
9. What are the factors responsible for natural breeding ?
10. What are the techniques of breeding in Indian major carps.
11. Give an account on induced breeding of fishes with special reference to major carps .
12. State about fisheries of Indian sea with special references to coastal fisheries of Odisha.
13. Write short note on fresh water fish culture in India.
14. What is sustainable aquaculture ?
15. Write about extensive , semi-extensive and intensive culture of fishes.
16. What do you understand by pen culture , cage culture and composite fish culture ?

17. What is the role of water quality in aquaculture ?
18. Give the fish pathology symptoms , etiology , prophylaxis and treatment of common diseases in fishes.
19. Give an account on pathological condition in cultivable fishes.
20. Give a brief account on exotic fishes. Add a note on history of transportation of important exotic fishes in India .
21. What are larvivorous fishes ?
22. State about exotic and indigenous species with special references to malaria control.