

CSM – 29/18
Fisheries Science
Paper – II

Time : 3 hours

Full Marks : 300

The figures in the right-hand margin indicate marks.

Candidates should attempt Q. No. 1 from Section – A and Q. No. 5 from Section – B which are compulsory and three of the remaining questions, selecting at least one from each Section.

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SECTION – A

1. Answer any **three** of the following :
 - (a) Enumerate the practice of carp culture following semi-intensive method. 20
 - (b) Describe the seed production and hatchery management techniques for freshwater prawn. 20
 - (c) Give an account of Aquatic environment management for sustainable aquaculture practices. 20

(d) Elaborately write the recent techniques developed for fish genetic characterization.

20

2. (a) Give an account of present global scenario of Aquaculture. 20

(b) Describe the practice of Agricultural crop and livestock integration in aquaculture systems.

20

(c) Write an account of ornamental fish culture.

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3. (a) Discuss the role of synthetic agents and their principle in induced breeding. 20

(b) Describe the feeding habits and nutritional requirements of cultivable finfishes. 20

(c) Enumerate the methods followed for insect and weed control in fish ponds. 20

4. (a) Discuss the role of probiotics for enhancing cultured fish production. 20

(b) Give an account of breeding and seed production methods for common egg laying ornamental fishes. 20

- (c) Enumerate the viral diseases of brackish water shrimp. Add a note on prophylactic and treatment methods to be followed for cultured shrimp. 20

SECTION - B

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5. Answer any three of the following :

- (a) Give an account of microbial flora associated with spoilage of freshly caught fresh water and marine fish. 20
- (b) How canning is different from any other preservation methods? Describe the kinds of packaging developed for heat processed sea-foods. 20
- (c) Write on the quality problems encountered in fresh, frozen, sun dried, salted and canned fishery products. 20
- (d) Discuss the principles of HACCP with reference to its applications in processing of frozen shrimps. 20
6. (a) Describe, in detail, the purse-seining, long lining and squid jigging methods of fishing. 30

(b) Give the classification of fishing gears employed in India and explain in brief the care and maintenance of boats and deck equipments during prolonged non-fishing days. **Techofworld.In** 30

7. (a) Discuss fish as source of n-3 fatty acids, essential amino acids, vitamins and minerals. 20

(b) Give an account of by-products prepared from fish and shrimp processing waste. 20

(c) Write, in detail, on the organisms associated with food poisoning from sea-foods. 20

8. (a) Describe the post-mortem changes in fish with respect to rigor mortis, autolysis and lipid oxidation. 20

(b) What is freezing of fish ? Discuss the types of freezers and freezing methods employed for freezing of fish. 20

(c) Write on the requirements of importing countries (EU, USA & Japan) on the quality specifications of fish and fishery products. 20

