

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.

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. 20
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

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. 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

