

CSM – 29/20
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 any **three** of
the remaining questions, selecting
at least **one** from each Section.*

SECTION – A

1. Answer any **three** of the following : 20×3 = 60
- (a) What is disease development process ?
Describe the Bacterial, Viral and Fungal diseases of IMCs.
- (b) Discuss on the site selection, lay out design, hatchery construction and hatchery management of **Penaeus monodon**.

- (c) Describe the innate and adaptive defence mechanism of Finfish.
 - (d) Describe the mechanism of Gynogenesis, Androgenesis and Sex reversible in fishes.
2. (a) Discuss on the scope of Aquaculture in the World for Socio-economic upliftment of people. 20
- (b) Describe the ingredients of supplementary food prepared for IMC and Shrimps. 20
- (c) Discuss on the Crustacean and protozoan parasitic diseases of finfish. 20
3. (a) Write on the types of synthetic hormones and mode of action on Carps. 20
- (b) What is the Cryopreservation ? Describe the success story of gametes preservation of fishes in India and abroad. 20
- (c) Discuss on the types of integrated Aquaculture with flora and fauna. 20
4. (a) Describe the Platyhelminthes parasites of Finfish and Shellfish. 20

- (b) Write on different types of Algal culture media and Algae culture for shellfish. 20
- (c) Discuss the seed production and culture of Shrimp or Crab in captivity. 20

SECTION – B

5. Answer any **three** of the following : 20×3 = 60
- (a) Discuss the principles of thermal processing of fish after harvest.
 - (b) Describe the fish as a source of the good protein, fatty acids, vitamins, minerals and amino acids.
 - (c) Discuss on BIS and IS systems used for fish and products.
 - (d) How many types of Freezers are used for fish storage and what is mechanism ?
6. (a) Discuss all types of canned products produced from finfish and shellfish. 20
- (b) Discuss the types of Marine engines used for fishing. 20

- (c) What is the mechanism of fish spoilage ?
Differentiate spoilage of fish, chicken and mutton. 20
7. (a) Discuss on types of food items are prepared from fish, such as fried, salted, dry, powder, curry. 20
- (b) How many types of microbes spoil the fish ?
Discuss, in details. 20
- (c) Discuss on by-products of fish, importance and uses. 20
8. (a) Discuss the harvest and post harvest techniques for Inland and Marine fishes. 20
- (b) Classify and describe the types of gears used in fish culture and harvesting. 20
- (c) Discuss the HACCP and ISO for fish and their importance. 20

