

CSM – 28/21
Fisheries Science
Paper – I

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** questions of the following :
20×3 = 60
- (a) Discuss the development and aquaculture during fourth Five Year Plan period.
 - (b) Give an account of family clupeidae.
 - (c) Write role of NABARD in fisheries development in India.
 - (d) Highlight protein synthesis process.

2. (a) Describe digestive system of carps. 20
- (b) Write short notes on the following : 20
- (i) Relative growth
 - (ii) Sex ratio
 - (iii) ATP cycles
 - (iv) MEY
- (c) Discuss breeding habit of **Cyprinus carpio**. 20
3. (a) Write structure of fisherman cooperatives in India. 20
- (b) Write short notes on the following : 20
- (i) Electrophoresis
 - (ii) Procaryotic cells
 - (iii) Food web
 - (iv) Benthos
- (c) Discuss marking and tagging techniques in fishes. 20
4. (a) Discuss different sampling methods used in research. 20

- (b) Write short notes on the following : 20
- (i) EEZ
 - (ii) Biomagnification
 - (iii) DNA structure
 - (iv) Nitrogen cycle
- (c) Write sewage treatment procedure. 20

SECTION – B

5. Answer any **three** questions of the following :

20×3 = 60

- (a) Discuss classification of extension teaching methods.
- (b) Write short notes on the following :
- (i) FFDA
 - (ii) ATMA
 - (iii) Peroxide value
 - (iv) Zooplankton
- (c) Discuss about coral reef conservation in India.
- (d) Brief : Cold water fisheries in India.

6. (a) Describe the topographic features of sea bottom. 20
- (b) Discuss role of MPEDA in fish and fishery export. 20
- (c) What is laws of sea ? What do you mean by Integrated Coastal Zone Management. 20
7. (a) Dicuss the different phases or stages in project formulation. 20
- (b) What is Gram Stain ? How is a Gram Stain Test performed ? 20
- (c) Distinguish Parametric Test vs Non-parametric Test with example. 20
8. (a) Write down the differences between Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD). 20
- (b) Write down Completely Random Design (CRD) process. 20
- (c) What is Normal Solution ? Write down the main currents in the Indian Ocean. 20

