

2015

M.Sc.

1st Semester Examination

FISHERIES SCIENCE

PAPER—FSC-104

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Write the answers to questions of each unit in Separate Books.

Unit—I

(Biology of Aquatic Resources and their Conservation)

1. Answer any *two* questions from the following : 2×2
 - (a) Differentiate between male and female *Lates Calcarifer*.
 - (b) State the Spawning season of *Tenuulosa ilisha*.

(Turn Over)

- (c) Define *in-situ* conservation with example.
- (d) Write the scientific names of different lobster species found in Bay of Bengal.

2. Answer any *two* questions from the following : 2×4

- (a) Discuss different maturity stages of female *penaeus monodon*.
- (b) State the natural distribution and feeding behaviour of *Hypophthalmichthys molitrix*.
- (c) Discuss reproductive behaviour of *Labeo rohita*. Add a note on fecundity.
- (d) Give an account on sustainable management of saline water aquatic resources.

3. Answer any *one* question from the following : 1×8

- (a) (i) Define endangered & Lower risk IUCN category with example.
- (ii) Discuss the causes of decline of fish species in nature.
- (iii) Give an account on different *ex-situ* conservation methods for fish biodiversity conservation.

- (b) (i) Give an account on life cycle of *Macrobrachium rosenbergii*.
- (ii) Describe Mackerel fishery along the Indian coast line.
- (iii) Add a note on the natural distribution of *Scylla serrata*.

$$3\frac{1}{2} + 3 + 1\frac{1}{2}$$

Unit—II

(Limnology & Oceanography)

4. Answer any *two* questions from the following : 2×2
- (a) Define renewable and non-renewable energy with examples from Oceanographic point of view.
- (b) State the effect of alkalinity on pH during diurnal variation.
- (c) Classify water on the basis of salinity. Enlist the major components of Sea water.
- (d) Enlist the standard water quality parameters for Indian major carp culture in West Bengal.

5. Answer any *two* questions from the following : 2×4
- (a) Enumerate the important physical and chemical characteristics of Indian ocean.
 - (b) Discuss Zonation of ocean with diagram and proper labelling.
 - (c) State the role of ocean current in respect to fisheries point of view of India.
 - (d) 'Tropical lake is more productive than Temperate lake' — Discuss.
6. Answer any *one* question from the following : 1×8
- (a) (i) Differentiate Lentic ecosystem from Lotic ecosystem.
 - (ii) Discuss thermal stratification of Lake ecosystem with diagram.
 - (iii) Add a note on zonation of riverine ecosystem with diagram. 3+3+2
 - (b) (i) Define tide. Classify them.
 - (ii) Discuss the effect of anthropogenic activities on the marine ecosystem.
 - (iii) Add a note on sustainable management of Indian ocean. (1+2)+3+2
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