

**2016**

**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, Biodiversity and Conservation)*

1. Answer any *two* questions from the following : 2×2
  - (a) What do you mean by bioindicator? Give examples from fish.

*(Turn Over)*

- (b) State the distinguishing characteristics between male and female *Macrobrachium rosenbergii*.
- (c) State about Index of Biotic Integrity?
- (d) Define *in-situ* conservation. Illustrate with example from fisheries point of view.
2. Answer any two questions from the following : 2×4
- (a) Discuss about breeding behaviour with a note on fecundity of *Labeo rohita*.
- (b) State the natural distribution, food and feeding behaviour of *Hypophthalmichthys molitrix*.
- (c) State an account on the different biodiversity Indices. Explain any one of them with proper example.
- (d) Give an idea about exotic fish species and invasive fish species with proper example.
3. Answer any one question from the following : 1×8
- (a) (i) Discuss about the life cycle of *Penaeus monodon*.  
(ii) Write a note on seed production of *Lates calcarifer*.  
4+4
- (b) (i) Define endangered and Lower risk IUCN category with example from fish.

- (ii) Discuss the different causes of decline of fish species in nature.
- (iii) Give an account on different *ex-situ* conservation methods for conservation of fish biodiversity.

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

### Unit—II

#### *(Oceanography, Remote Sensing and GIS)*

4. Answer any *two* questions from the following : 2×2
- (a) Define EEZ. Briefly state about Indian EEZ.
- (b) What is upwelling? Mention its importance.
- (c) What is meant by potential fishing zone (PFZ)?
- (d) Classify ocean plankton population on the basis of their size.
5. Answer any *two* questions from the following : 2×4
- (a) State the different zonation of Ocean with diagram.
- (b) Write down the major chemical composition of sea water.

- (c) Discuss about Ocean current in Indian Ocean and their importance.
- (d) Discuss about the application of remote sensing in capture fisheries.

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

- (a) (i) Define biological oceanography.
  - (ii) Write a note on the condition of temperature and salinity in the oceanic depth.
  - (iii) Discuss about renewable and non-renewable ocean energy. 2+3+3
- (b) (i) Classify tide.
  - (ii) State the causes of different tides.
  - (iii) Discuss about different anthropogenic activity occur in Ocean. 2+3+3
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