

2018

**M.Sc. Part-II Examination**

**ZOOLOGY**

**PAPER—IX B**

*Full Marks : 50*

*Time : 2 Hours*

*The figures in the margin indicate full marks.*

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

*Illustrate the answers wherever necessary.*

*Use separate Answer-scripts for each unit.*

**(Ecology Special)**

**Group-B**

Answer any *four* questions taking *two* from each unit.

**Unit—I**

*[Aquatic Ecology]*

1. (a) Briefly describe all the categories of aquatic biota with appropriate examples.

*(Turn Over)*

- (b) Explain why mangroves are considered as highly productive ecosystems.  $9+3\frac{1}{2}$

2. (a) Explain different levels of Eutrophication.

(b) Distinguish between Marshes and Swamps.

(c) What is the importance of continental margin?

$$7+2\frac{1}{2}+3$$

3. (a) Draw and label various zonations of a lacustrine ecosystem.

(b) Describe the seasonal variation in vertical stratification of lakes.

(c) Enlist the factors affecting coastal zone.

$$4+5+3\frac{1}{2}$$

4. Write short notes on any *three* of the following :

(a) Ramsar wetland,

(b) Upwelling,

(c) CRZs,

(d) Positive & Negative Estuary,

(e) Meromictic, Amictic and Holomictic lakes.

$$4+4+4\frac{1}{2}$$

## Unit—II

### [ Human Ecology ]

5. Enlist different causes of population explosion in developing countries. What is Demographic Quotient? Discuss the strategies to be undertaken to control human population.  $4\frac{1}{2}+2+6$

6. State the causes and effects of acid rain. Add a note on green house effect. What is biopolitics? Highlight its significance in respect of global environment management strategies.  $3+4+3\frac{1}{2}+2$

7. Mention the criteria for designating a place to be considered as Urban area. Briefly discuss the effects of urbanization on biodiversity conservation strategies.

8. Write short notes on the following :

(a) Any *two* of the following :  $2 \times 4$

(i) Extinction vortex,

(ii) PAN and its effects on environment,

(iii) Mitigation strategies against global warming.

- (b) Any one of the following :  $1 \times 4 \frac{1}{2}$
- Thermal Imersion and its significance,
  - EL-Nino.

**(Fishery Special)**

**Group-B**

Answer any four questions taking two from each unit.

**Unit—I**

*[Inland and Marine Fisheries]*

- What are inland fishery resources of India?
  - Describe different inland fishery resources with latest authentic data.
  - Briefly narrate the strategies for conservation of inland fishery resources.

- (d) Add a note on the problems of inland aquaculture.

$2+4+4+2 \frac{1}{2}$

- Give an account on the need of Indian reservoir management.
  - State the factors affecting fish production in India reservoir.
  - What are recommendations for the management and conservation of riverine fisheries?
  - State the salient features of an ideal estuary.

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

- Give an account of the problems and prospect of backwater fisheries in India.
  - What are the application of remote sensing on fisheries resource exploitation?
  - Briefly explain the distribution and biology of Indian shad.

$(2 \frac{1}{2}+2)+4+4$

4. Write short notes on the following :

- (a) Present status of marine fish conservation in West Bengal.
- (b) Waste water fish and public health.
- (c) Market failures and poverty.
- (d) Economic model in fishery.  $3+3+3+3\frac{1}{2}$

### Unit—II

#### [Aquaculture & Fish Technology]

5. (a) Mention causative agent and symptoms of dropsy of carps. How environmental temperature and body size affect energy requirement of a fish ?
- (b) Write a note on sympatric breeding.
- (c) Comment on EUS. Discuss on vitellogenesis and final oocyte maturation in the fish ovary.  $(2+3)+2\frac{1}{2}+(3+2)$
6. (a) Mention the advantage of cage culture of fish. Name two submerged aquatic weed. State the criteria for selecting a fish poison.

- (b) Discuss the method of sea bass culture in Bheri. Mention the composition of pearl.  $(2+2+1)+(5+2\frac{1}{2})$

7. (a) Mention the principle of integrated fish farming. Discuss the methods of transportation of fish seed. Add a note on diseases of prawn.
- (b) Differentiate dry and wet bundh breeding. Comment on cryopreservation.  $(2+2+3)+(3+2\frac{1}{2})$
8. (a) Classify weed. What is gill net and state its application.
- (b) Discuss the method of smoking for fish preservation.  $(4+3)+5\frac{1}{2}$