

**M.Sc. 3rd Semester Examination, 2023**

**FISHERIES SCIENCE**

**PAPER — FSC-302 (Unit-1 & Unit-2)**

*Full Marks : 50*

*Time : 2 hours*

*The figures in the right hand margin indicate marks*

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

**PAPER — FSC-302 (Unit-1)**

*( Fish Genetics & Biotechnology )*

1. Answer any *two* of the following : 2 × 2

(a) Write a note on cross breeding.

(b) Name the steroids used for sex reversal in fish.

*( Turn Over )*

- (c) What do you mean by Intellectual Property Right (IPR) ?
- (d) Explain the importance of biotechnology in fish culture.

2. Answer any *two* of the following : 4 × 2

- (a) Explain how the giant molecule of DNA packaged into a metaphase chromosome in Eukaryotic cell.
- (b) Give an account of evolution of fish karyotypes.
- (c) Briefly discuss on selective breeding of fish and its importance.
- (d) Write a note on procedure for advancement of maturity and reproduction in fish.

3. Answer any *one* of the following :  $8 \times 1$

(a) Define genome manipulation. Briefly describe induced Gynogenesis in fish with suitable examples.  $2 + 6$

(b) Briefly explain the procedure for the production of monosex population and super male with a note to its utility in aquaculture production.  $6 + 2$

**PAPER -- FSC-302 (Unit-2)**

( *Aquaculture Engineering and Management* )

4. Answer any *two* of the following :  $2 \times 2$

(a) What is Recirculating Aquaculture System (RAS) ?

(b) How does IMTA work ?

(c) What are benefits of smart aquaculture ?

(d) Briefly explain Aquamimicry system.

5. Answer any *two* of the following : 4 × 2

(a) Write notes on integrated fish farming and name 4 examples.

(b) Describe present status of aquaculture production in Indian perspective.

(c) State the layout and structure of any primary pond dike and discuss pond dike protection methods.

(d) How would you monitor water quality parameters in shrimp farming pond using smart technology ?

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

(a) What is Biofloc Technology of Fish culture ? Describe the technics of Biofloc fish farming and state its relevance in Aquaculture. 2 + 4 + 2

(b) Write a brief note on : 4 + 4

- (i) Draw and level of a typical carp fish farm with typical water area
- (ii) Name different kind of fertiliser and their importance.

**[ Internal Assessment — 10 Marks ]**

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