

M.Sc. 2nd Semester Examination, 2023

FISHERIES SCIENCE

PAPER—FSC-202

Full Marks : 40

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

UNIT—1

(Reproduction in Finfish and Shellfish)

[Marks : 20]

1. Answer any *two* of the following : 2 × 2
- (a) Briefly discuss on hermaphroditism in fish.
 - (b) Mention the cellular composition of rostral pars distalis.

(Turn Over)

- (c) Write a note on fecundity in fish.
- (d) Briefly discuss on importance of brood care for fish breeding.

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

- (a) Describe the role of pineal hormone in fish reproduction.
- (b) Discuss different stages of oocyte during its development.
- (c) Give an account of reproductive strategies exhibited by fishes.
- (d) Describe the factors affecting fish Maturation and Spawning.

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

- (a) Describe the neuro-endocrine regulation of ovulation and spawning in tropical teleost fish. Add a note on offseason breeding in Indian major carps. 5 + 3

- (b) Discuss different phases of annual ovarian cycle of a tropical teleost. Write a note on gonochorism in fish. 5 + 3

UNIT-2

(*Fish Breeding, Hatchery Design and Management*)

[Marks : 20]

4. Answer any *two* of the following : 2 × 2
- (a) What is GnRH analogue ? State its importance.
- (b) State the limitations of hypophysation technique.
- (c) Write a note on multiple breeding of carps with its significance.
- (d) State the principle of biosecurity in fish hatchery system.

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

- (a) Briefly describe the steps of cryopreservation of male gamete of fish.
- (b) Give an account of alternate inducing agents used for fish breeding.
- (c) Briefly discuss on suitable sites for establishment of carp hatchery.
- (d) Explain the parts of eco-hatchery complex with suitable diagram.

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

- (a) (i) Calculate the dimension of an incubation pool with capacity to incubate one crore eggs.
- (ii) Calculate the broodfish and brood rearing pond area requirement for the production of one crore spawn of *Labeo rohita* in a season. 4 ÷ 4

- (b) Write short note on the following : 8
- (i) Bundh breeding 2
 - (ii) GnRH based inducing agents 2
 - (iii) Types of carp hatchery 2
 - (iv) Operational management in incubation pool. 2
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