

2022

M.Sc.

2nd Semester Examination

FISHERIES SCIENCE

PAPER—FSC-202

Full Marks : 50

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.

UNIT-202.1

FISH REPRODUCTION

1. Answer any two questions.

2×2

(a) Write a short note on offseason breeding of carps.

(Turn Over)

- (b) What is LINPE method of induced breeding?
- (c) Point out the difference between pre-vitellogenic and vitellogenic oocytes.
- (d) Discuss the mating pattern exhibited by fishes.

2. Answer any *two* questions. 2×4

- (a) Describe different steps for the cryopreservation of fish gametes.
- (b) Briefly write on collection, preservation and preparation of crude pituitary gland extract.
- (c) Discuss different phases of ovarian cycle of a tropical teleost.
- (d) 'Oocyte envelope is steroidogenic in nature' – Explain.

3. Answer any *one* question. 1×8

- (a) Explain GnRH analogue and its importance. Describe the role of HPGL axis in the regulation of fish reproduction. 3+5

- (b) Give an account of alternate inducing hormones used in fish breeding. Discuss the factors affecting gonadal development and maturation in fish. 4+4

UNIT-202.2

HATCHERY DESIGN & MANAGEMENT

1. Answer any *two* questions. 2×2
- (a) Enlist different types of carp hatchery.
 - (b) State the principles of bio-security in hatchery system.
 - (c) Mention the criteria of quality seed.
 - (d) Write the characteristic of fish under stress.
2. Answer any *two* questions. 2×4
- (a) Write a note on the suitable site selection for a carp hatchery complex.
 - (b) Write a note on necessity for fish seed certification and quarantine procedures.

- (c) Discuss the suitable practices to reduce the risk of pathogen spread in a hatchery.
- (d) Calculate the brood fish & brood rearing pond area requirement for the production of one crore spawn of *Labeo rohita* in a season.

3. Answer any one question.

1×8

- (a) Calculate the dimension of a Chinese circular incubation pool with capacity to incubate 80 lakh eggs. Write the management practices followed during spawning and incubation pool operation. 4+4
- (b) Explain the parts of a carp eco-hatchery with suitable diagram with labeling. Briefly discuss on design and construction of hatchery of *Macrobrachium rosenbergii*. 4+4

[Internal Assessment – 10 Marks]
