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PG/2nd Sem/FSC/19

2019

M.Sc.

2nd Semester Examination

**FISHERIES SCIENCE**

Paper - FSC 202

Full Marks : 40

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.*

**Unit - 1**

**(Fish breeding)**

1. Answer any *two* questions from the following :

2×2=4

- (a) State the limitations of hypophysations technique.
- (b) Write a short note on sexuality in fishes.
- (c) What is GnRH analogue? State its importance.
- (d) Write the characteristics to identify stage-II and stage-III oocyte of fish.

[ Turn Over ]

2. Answer any *two* questions from the following :

2×4=8

- (a) Write the importance of brood stock management of carps for quality seed production.
- (b) Describe the phase of the annual reproductive cycle of Indian major carp ovary.
- (c) Briefly write on collection, preservation and preparation of PG extract.
- (d) Discuss the photothermal and hormonal factors affecting gonadal development and maturation in fish.

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

- (a) (i) Name the hypothalamic neuropeptides controlling fish reproduction.
- (ii) Describe the hormonal regulation on previtallogenic phase in teleost. 2+6
- (b) (i) Write a note on multiple breeding of carps with its significance.
- (ii) Briefly describe the steps of cryopreservation of fish spermatozoa. 4+4

( 3 )

Unit - 2

**(Hatchery Design & Management)**

4. Answer any *two* questions from the following :

2×2=4

- (a) State the principles of biosecurity in hatchery system.
- (b) Mention the criteria of identification of quality seed.
- (c) Enlist different types of fish hatcheries.
- (d) Enlist the sign exhibited by a fish under stress condition.

5. Answer any *two* of the following :

2×4=8

- (a) What is sanitary and phytosanitary measures ?  
Write a note on it.
- (b) Describe the process of preparation of carp nursery pond — both pre-and post-stocking.
- (c) Write a note on the nature of eggs in different groups of tropical fishes.
- (d) Indicate the importance of fish seed certification and quarantine procedures.

[ Turn Over ]

( 4 )

6. Answer any *one* question of the following :  $1 \times 8 = 8$

- (a) (i) Calculate the brood fish and brood rearing pond area requirement for the production of 1 core spawn of Indian major carp in a season. 4
- (ii) Describe the management practices followed during spawning and incubation pool operation. 4
- (b) (i) Give an account of design and construction of giant freshwater prawn hatchery.
- (ii) Write a note on different methods of fish seed transportation.
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