

PG (CBCS)  
M.Sc Semester- II Examination, 2023  
FISHERIES SCIENCE  
PAPER: FSC 202  
(REPRODUCTION IN FINFISH & SHELLFISH AND FISH BREEDING,  
HATCHERY DESIGN & MANAGEMENT)

Full Marks: 40

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.

**Write the answer for each unit in separate sheet**

**UNIT: FSC 202.1**

**REPRODUCTION IN FINFISH & SHELLFISH**

**GROUP-A**

1. Answer any **TWO** from the following questions: 2×2=4
- What do you mean by sexual dimorphism in fish? Give an example.
  - How do the pheromones play a role in fish breeding?
  - Define courtship and mating.
  - What is eye stack ablation?

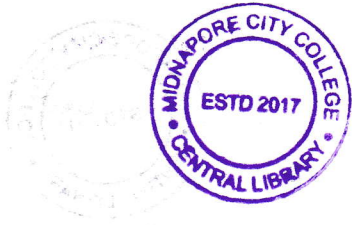
**GROUP-B**

2. Answer any **TWO** from the following questions: 2×4=8
- State the major factors affecting the breeding of fish in natural environment.
  - How do oocytes develop from their initial stage to maturation in fishes?
  - Write in brief the ovarian cycle in fish.
  - Write a short note on oviparous, ovo-viviparous and viviparous mode of fish breeding.
  - What are the roles of pineal hormones in fishes?

**GROUP-C**

3. Answer any **ONE** from the following questions: 1×8=8
- Discuss the advantage and disadvantage of hypopysation techniques. Give an account alternative synthetic hormones used in fish breeding. 4+4
  - Write down the structure of pituitary gland and its secretion of different hormones and their roles. 4+4

**(P.T.O)**



(2)

## UNIT: FSC 202.2

**FISH BREEDING, HATCHERY DESIGN & MANAGEMENT****GROUP-A**

1. Answer any **TWO** from the following questions: 2×2=4
- Write a note on SPF and SPR.
  - What do you mean by cryoprotectant? Give example.
  - Write the names of anaesthetics drugs used in fish seed transportation.
  - What is GnRH analogue? State its importance.

**GROUP-B**

2. Answer any **TWO** from the following questions: 2×4=8
- Give account on the biosecurity in hatchery management.
  - What are the advantages and disadvantages of Chinese Eco Hatchery system?
  - Discuss different methods of fish seed transportation.
  - Write note on multiple breeding of carps with its significance.

**GROUP-C**

3. Answer any **ONE** from the following questions: 1×8=8
- Write down shellfish seed collection from nature. Add a note on fish seed certification. 4+4
  - What is the technique behind eye stalk ablation? Which is the anaesthetic drug used during eye stalk ablation?  
Discuss on the brood stock management of IMC. 2+1+5

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