2019

M.Sc.

4th Semester Examination

FISHERIES SCIENCE

Paper - FSC 403

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 - I

(Aquaculture Engineering and Environment Management)

1. Answer briefly any *two* questions from the following : 2×2=4

   (a) What is Sluice ? State its functions.

   (b) Briefly mention the significance of Bio-filters.

   (c) State the disadvantages of cage culture.

[Turn Over]

(d) Compare among semi-intensive and intensive culture system.

2. Answer any *two* questions from the following : 2×4=8

(a) Briefly narrate any two aerators used in shrimp farming.

(b) State different factors influencing dissolved oxygen content in pond water.

(c) Describe the aquaponics with merits and demerits.

(d) Briefly explain different inputs used in pond preparation.

3. Answer any *one* questions from the following : 1×8=8

(a) (i) What is pen culture ?

(ii) Describe advantages and disadvantages of pen culture.

(iii) Add a note on one organic aquaculture. 2+4+2

(b) (i) What are the criteria to be considered before selecting a site for construction of aquaculture farm ?

(ii) State the advantages and disadvantages of tank aquaculture.

(iii) What are the constrains of integrated fish farming ? 3+3+2

Unit - II

(Fish Genetics and Biotechnology)

4. Write short note on any *two* of the following : 2×2=4

   (a) Nucleosome

   (b) Transgenic fish

   (c) Application of fish cytogenetics

   (d) Importance of mono-sex fish culture

5. Answer any *two* of the following questions : 2×4=8

   (a) Discuss different methods of sterilization in fish and its utility. 3+1

   (b) Briefly discuss fish hybridization with suitable examples. 4

   (c) Write in brief about the polyploidy in fish and its utility in aquaculture. 4

[Turn Over]

(d) Briefly write on Intellectual Property Rights (IPR) and its benefits. 3+1

6. Answer any *one* from the following questions : 1×8=8

(a) Define genome manipulation. Briefly describe induced gynogenesis in fish with suitable diagram. 2+6

(b) (i) Elaborate the process of DNA folding and packaging into a Metaphase chromosome.

(ii) Write a short note on selective breeding in fish. 6+2