

M.Sc. 3rd Semester Examination, 2023

FISHERIES SCIENCE

PAPER — FSC-303(Unit-1 & Unit-2)

Full Marks : 50

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

PAPER — FSC-303 Unit-1

(Special Paper : Aquaculture Practices)

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

(a) What are different systems of Aquaculture ?

(b) Name two seaweeds and their importance in aquaculture.

(c) Mention the scientific name of two live bearer and two egg layer ornamental fish.

(d) What is the nutrient requirement of ornamental fish ?

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

(a) Describe the aquarium management procedure with suitable steps.

(b) Briefly discuss larval developmental stages of any one fin fish.

(c) Name one fungal and one bacterial fish disease and their causative agent, preventive treatment measure. 2 + 2

(d) What do you mean by exotic fish ? Discuss about their impact on indigenous ichthyofauna. 1 + 3

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

- (a) Mention the scientific name of one commercially important finfish and one shell fish and write shortly their culture practices. 1 + 1 + 3 + 3
- (b) Write down the pond preparation techniques in freshwater aquaculture. Add a note on the culture procedure of tubifex as live food organism. 4 + 4

PAPER — FSC-303 Unit-2

(*Fish Nutrition and Bioenergetics*)

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

- (a) What do you mean by feed additives ?
Give two examples.
- (b) Mention the relation between FCR and PER.

(c) What is antinutrients ? Give four example.

(d) Write on the hydro stability of fish feed.

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

4 × 2

(a) Discuss different factors influencing energy partitioning in aquatic organism.

(b) Give an account on the digestion process of food in fish.

(c) Compare aquatic verses terrestrial organism's nutritional management.

(d) State the sources and role of vitamin C in fish nutrition.

6. Answer any *one* question from the following :

8 × 1

(a) How trypsin and chymotrypsin play major

role in protein digestion in stomach-less fishes ? Percentage of crude protein in the following ingredients are : Rice bran : 13%, Soyabean cake : 48%, Maize meal : 16%, Fish meal : 54%. Formulate a fish feed containing 35% crude protein with the above ingredients using Pearson's Square Method and determine the required quantity of each ingredient to make 10 tons of feed. 3 + 5

- (b) What do you mean by Digestible Energy and Metabolizable Energy ? Which amino acids are dietary essentials for carps ? Write a note on feed storage. 3 + 2 + 3

[Internal Assessment – 10 Marks]
