SEAL

F/O/R/EXAMS
2020

300001

FISHERY SCIENCE

PAPER—I

Time : 3 hours] [Full Marks : 100

Notes : *(i)* Answer the questions as directed.

(ii) The figures in the right-hand margin indicate full marks for the questions.

SECTION—A

(Aquaculture)

1. Give an account of the present level of aquaculture production in India. Indicate the main constraints and suggest the method to promote aquaculture production. 10

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Or

Describe the various chemotherapeutic measures for the prevention of parasites and diseases in culture system.

2. Write notes on the following (any *four*) : 3×4=12

(a) Inbreeding depression

(b) Immunostimulant

(c) Compensatory growth technology

(d) Biofloc technology

(e) Aquaponics

(f) Cage aquaculture

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3. Answer any *two* of the following : 6×2=12

(a) Comment on the impact of exotic fish species on Indian fisheries.

(b) Write in brief about the Integrated Farming System.

(c) Write the prospects of cold-water fisheries in Arunachal Pradesh.

SECTION—B

(Fishery Biology)

4. Give a brief account of the present status of marine fisheries in India. 10

Or

What are the different methods for age and growth determination of fish? 10

5. Write short notes on the following (any *five*) : 2×5=10

(a) Alpha taxonomy

(b) Food and feeding habit of Indian major carps

(c) Ecosystem-based fisheries management

(d) Ram ventilation

(e) Osmotic and ionic regulation in fishes

(f) Hypothalamus

(g) Pheromones

6. Answer any *two* of the following : 6×2=12

(a) Work out a strategy for the sustainable development of cold-water fisheries of Arunachal Pradesh.

(b) What are the methods employed in the study of maturity stages of teleost fishes?

(c) How can remote sensing and GIS be used in fishery?

SECTION—C

(Fishery Hydrography)

7. What is the mode of action of ammonia and its toxic levels to aquatic organisms? What factors influence ammonia toxicity? What are the measures to control ammonia toxicity? 3+2+5=10

Or

Write a brief note on standard operating procedure for soil and water quality management in carp culture. 10

8. Write short notes on the following (any *five*) : 3×5=15

(a) Benthos

(b) Ecological pyramid

(c) Echolocation

(d) Eutrophication

(e) Upwelling

(f) Plankton

(g) Biodiversity

9. Answer any *one* of the following :

(a) What are biomagnification and bioremediation? Give an account on the measures to counteract biomagnification. 4+5=9

(b) What is primary productivity? How does pH play a vital role in fish production? 3+6=9