

R8429

Sub. Code

547201

M.Sc. DEGREE EXAMINATION, APRIL – 2023

Second Semester

Fisheries Science

FINFISH AND SHELLFISH BIOLOGY

(CBCS – 2022 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. Which of the following is true in a diadromous fish?
 - (a) The adults spawn in seawater.
 - (b) The adults spawn in the freshwater.
 - (c) The hatchlings are found mostly in the sea water
 - (d) Both (a) and (c)

2. What is the salinity of sea water?
 - (a) Around 30 ppt (b) Around 120 ppt
 - (c) Around 10 ppt (d) Less than 0.1 ppt

3. Which of the following neurohormone is produced in eyestalk of a crab?
 - (a) Moulting inhibiting hormone
 - (b) Gonadal inhibiting hormone
 - (c) Moulting promoting hormone
 - (d) Ecdysteroid moulting hormone

4. Which of the following is the correct order in the life cycle of a lobster?
- (a) Eggs, phyllosomes, adults
 - (b) Eggs, zoea, nauplius, adults
 - (c) Eggs, protozoa, nauplius, adults
 - (d) Eggs, mysis, zoea, adults
5. What are pereopods used for?
- (a) To gather spermatheca
 - (b) To gather food
 - (c) To store hatchlings
 - (d) To swim
6. What is the scientific name of brown mussel?
- (a) *Mollus aculatus* (b) *Herdia fuscus*
 - (c) *Perna perna* (d) *Bivalvo fuscus*
7. To which of the following group does *Macrobrachium rosenbergii* come under?
- (a) Clam (b) Prawn
 - (c) Oyster (d) Lobster
8. Which of the following is known as the third eye of fish?
- (a) Tectum (b) Pineal organ
 - (c) Pituitary gland (d) Cerebrum
9. *Trochus sp* are commercially important. What are they?
- (a) Oyster (b) Mussel
 - (c) Snail (d) Clam

Part C

(5 × 8 = 40)

Answer any **five** questions.

All questions carry equal marks.

Each answer should not exceed two pages.

16. Describe on the fish reproduction system in general. Include their feeding habit and migration associated with reproduction.
17. Write in detail the relationship between reproductive and endocrine systems. Write about their significance in fish industry.
18. Compare the larval stages, feeding habits, age, growth and life cycle of prawn with shrimp.
19. Note down in detail, the reproductive cycle, larval stages and migration seen in a crab.
20. What is the international status of clam and mussels? Write about their life cycle, growth and reproduction.
21. Elaborate in detail, the differences between a squid, an octopus and a cuttlefish.
22. Write in detail about various commercially important shellfishes.
23. Explain about some of the features found in finfishes and shellfishes that are similar. Also, draw and explain the differences between the different shellfishes.

R8430

Sub. Code

547202

M.Sc. DEGREE EXAMINATION, APRIL – 2023

Second Semester

Fisheries Science

FISHING CRAFTS AND GEARS

(CBCS – 2022 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions. All questions carry equal marks.

1. Which among these is known as throw net
 - (a) Cast net
 - (b) Gill net
 - (c) Drift net
 - (d) Drop net

2. MSY refers to _____.
 - (a) Maximum Social Yield
 - (b) Minimum Social Yield
 - (c) Maximum Sustainable Yield
 - (d) All the above

3. The major gear used to exploit tunas from the Indian coastal waters is
 - (a) Drift gill nets
 - (b) Trawlers
 - (c) Purse seines
 - (d) Trolling

4. _____ nets are kept overnight in the water and then dragged.
- (a) Gill nets (b) Scoop nets
- (c) Trawl nets (d) All the above
5. The fisherman detect the fish traditionally through following local knowledge
- (a) Behavior of birds (b) Surface water disturbances
- (c) Fishy smell (d) All the above
6. Which one of the following fishing gears made by synthetic fibre?
- (a) Bast fibres (b) Poly vinyl chloride
- (c) Silk fibres (d) None
7. The examples for towed and dragged gear is
- (a) Otter trawl (b) Beam trawl
- (c) Demersal trawl (d) All the above
8. _____ is the net surround the particular water area usually coastal or shallow water.
- (a) Lift net (b) Seine net
- (c) Gill net (d) None
9. Which one of the following is the grappling and wounding gear.
- (a) Spears (b) Bow and arrows
- (c) Harpoons (d) All the above

10. Which one of the following is the consequences of overfishing?
- (a) Loss of biodiversity
 - (b) Change in ecosystem structure
 - (c) Both (a) and (b)
 - (d) None of these

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a brief note on surrounding nets with illustration.

Or

- (b) Explain about fishing traps with neat illustration.

12. (a) Write about the maintenance of fishing crafts.

Or

- (b) Explain about the classification of outboard and inboard engines.

13. (a) Write a short note on modern fishing gears.

Or

- (b) Give a short account on yarn numbering system.

14. (a) What are the different types of fishing gears?

Or

- (b) Describe about the destructive and prohibited fishing gears.

15. (a) Write a brief note on concept of responsible fisheries.

Or

- (b) Describe about Indian fisheries act and coast guard act.

Part C

(5 × 8 = 40)

Answer any **five** questions.

16. Write a detailed account on principal methods of exploitation of fishes.
17. Explain about the various construction materials for fishing crafts.
18. Describe about the advantages and disadvantages of FRP boats.
19. Write an essay on fishing gears and its types with neat illustrations.
20. Describe about traditional and modern fishing gears in India.
21. Write a detailed account on stupefying gears and its significance.
22. Write an essay on mesh size regulations and its importance.
23. Describe in detail about regulations for fishing crafts and gears.

R8431

Sub. Code

547203

M.Sc. DEGREE EXAMINATION, APRIL – 2023

Second Semester

Fisheries Science

**FISHERIES MANAGEMENT, REGULATIONS AND
CONSERVATION**

(CBCS – 2022 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** the questions.

1. Continental shelf of Indian waters
 - (a) 0.50 million km²
 - (b) 0.55 million km²
 - (c) 0.60 million km²
 - (d) 0.65 million km²
2. TED is a facility
 - (a) Escaping device for the turtle
 - (b) Breeding ground for the turtle
 - (c) Hatching facility for the turtle
 - (d) Shell of the turtle
3. Scientific name of Indian Mackerel
 - (a) *Trichiurus lepturus*
 - (b) *Harpodon nehereus*
 - (c) *Rastrelliger kanagurtha*
 - (d) *Bregmaceros maclellandi*

4. State fish of Tamil Nadu
 - (a) *Nemipterus japonicus*
 - (b) *Mugil cephalus*
 - (c) *Amphiprion sebae*
 - (d) None of the above

5. PMMSY schemes is implanting by
 - (a) NFDB
 - (b) CMFRI
 - (c) DST
 - (d) NABARD

6. The period of trawl ban in Tamil Nadu
 - (a) June and July
 - (b) May and June
 - (c) July and August
 - (d) None of the above

7. The revised CRZ notification under the environment protection act 1986 was passed in
 - (a) February, 2011
 - (b) February, 1991
 - (c) January, 2011
 - (d) January, 2010

8. CPUE means
 - (a) Catch per Unit Effort
 - (b) Catch Vs units
 - (c) Catch Per total unit effort
 - (d) None of the above

9. FAD
 - (a) Fish Adapting Device
 - (b) Fish Aggregating Device
 - (c) Fisheries and Aquaculture Development
 - (d) None of the above

Part C

(5 × 8 = 40)

Answer any **five** questions.

16. Explain about the important fishing regulation acts/rules for conservation and management.
 17. What are the measures to regulate the fishing effort?
 18. Explain about the different fishing regulations in maritime states of India.
 19. Explain about the Code of Conduct of Responsible Fisheries.
 20. Explain about deep sea fishing regulation.
 21. Explain about EEZ concept and its implementation in fisheries.
 22. What are the concepts and implications of interlinking of rivers for fisheries and biodiversity?
 23. Discuss the ex-situ and in-situ conservation programmes.
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R8432

Sub. Code

547204

M.Sc. DEGREE EXAMINATION, APRIL – 2023

Second Semester

Fisheries Science

SHELLFISH AND FINFISH HATCHERY MANAGEMENT

(CBCS – 2022 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** questions.

1. The natural source for finfish seed collection from inland system
 - (a) Seed collection from river
 - (b) Seed collection from lake
 - (c) Seed collection from pond
 - (d) None

2. The common name for *Mugil cephalus*
 - (a) Seabass
 - (b) Gey-mullet
 - (c) Milk fish
 - (d) Pearlsport

3. Majority of the major carps breed during
 - (a) South-west monsoon
 - (b) North-east monsoon
 - (c) Both
 - (d) None

4. Megalopa larva belongs to
- (a) Crustaceans (b) Shrimp
(c) Bivalve (d) Gastropods
5. The technologies for pearl oyster farming, clam and mussel culture were developed by
- (a) CIBA (b) CIFE
(c) CMFRI (d) CIFA
6. Pearl oyster belongs to the genus
- (a) Pinctada (b) Perna
(c) Bivalvia (d) None
7. Chilka lake is
- (a) Lagoon (b) Bheri
(c) Backwater (d) Mangrove
8. Grey mullets are
- (a) Euryhaline (b) Stenohaline
(c) Eurythermal (d) None
9. National Bureau of Fish Genetic Resources is located at
- (a) Jabalpur, Madhya Pradesh
(b) Lucknow, Uttar Pradesh
(c) Hyderabad, Andhra Pradesh
(d) Bhopal, Bihar

10. RAS stands for _____
- (a) Recirculating aquaculture system
 - (b) Recirculating agriculture system
 - (c) Recirculation aquaculture system
 - (d) Recirculation agriculture system

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a brief note on maturation of Indian major carps.

Or

- (b) How do you select the broodfish for breeding?

12. (a) Write about the broodstock quality of shrimp.

Or

- (b) Explain about the methods of shrimp seed packing and transportation.

13. (a) Write a short note on embryonic and larval development of bivalve.

Or

- (b) Give a short account on brood stocks collection of oyster and mussel.

14. (a) What are the natural source for marine finfish seeds?

Or

- (b) Describe about the induced breeding in sea bass.

15. (a) Write a brief note on brood bank / brood stock quarantine.

Or

- (b) What are the site selection criteria for hatchery construction?

Part C

(5 × 8 = 40)

Answer any **five** questions.

16. Write a detailed account on biology and life cycle of major cultivable finfishes.
17. Explain about the present status of finfish hatcheries in India.
18. Describe about the developmental stages of crab with illustrations.
19. Write an essay on site selection, design and equipments for large scale molluscan hatchery.
20. Describe about live feed production in molluscan hatcheries.
21. Write a detailed account on marine finfish hatchery production technology.
22. Write an essay on shellfish brood bank and its international trade.
23. Describe about the economics and cost analysis of large-scale shrimp hatcheries.

R8433

Sub. Code

547506

M.Sc. DEGREE EXAMINATION, APRIL – 2023

Second Semester

Fisheries Science

AQUATIC POLLUTION

(CBCS – 2022 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 1 = 10)

Answer **all** the questions.

1. Which of the following is the major reason for algal bloom?
 - (a) Presence of heavy metals
 - (b) Contamination of pathogens
 - (c) Eutrophication
 - (d) Soil erosion
2. Mercury poisoning in water is the reason for
 - (a) Pellagra
 - (b) *Minamata* disease
 - (c) *Itai-itai*- disease
 - (d) Scurvy
3. What is the full form of BOD?
 - (a) Biological Oxygen Demand
 - (b) Biological Oxygen Demand
 - (c) Biometric Oxygen Demand
 - (d) None
4. The main cause of water pollution is
 - (a) Marine dumping
 - (b) Industrial waste
 - (c) Sewage and waste water
 - (d) All of these

5. Nitrate poisoning in water causes a disease called
(a) Minamata disease
(b) Methemoglobin
(c) Blue baby syndrome
(d) None
6. Winkler's method is used to determine
(a) Carbon dioxide
(b) Dissolved oxygen
(c) Biological Oxygen Demand
(d) All of these
7. Disinfection of water is mainly done by
(a) Hydration (b) Filtration
(c) Chlorination (d) Oxygenation
8. Central Marine Fisheries Research Institute is located in
(a) Mangalore, Karnataka
(b) Cochin, Kerala
(c) Chennai, Tamil Nadu
(d) None
9. Salinity of brackish water
(a) More than 30 ppt (b) Less than 30 ppt
(c) 30 ppt (d) None
10. Which of the following is not a greenhouse gas?
(a) Oxygen (b) Nitrous oxide
(c) Methane (d) Carbon dioxide

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about the current status of aquatic pollution in India.

Or

- (b) What are the sources and types of aquatic pollution?

12. (a) Describe about *itai-itai* disease
Or
(b) Explain about the sources and impact of pesticide pollution.
13. (a) Describe about EIA.
Or
(b) Write about the water quality criteria followed in India.
14. (a) How do you remove the nitrogen and phosphorous from wastewater?
Or
(b) Explain about the treatment of waste from fish processing plants.
15. (a) Write a brief note on Ocean Acidification.
Or
(b) Explain about alien species with suitable examples.

Part C (5 × 8 = 40)

Answer any **five** questions.

16. Write an essay on types of aquatic pollution and its impacts.
17. Describe about the types of aquatic pollution surveys.
18. Give a detailed account on various aquatic pollution and its transportation processes.
19. Write an essay on wastewater management strategies.
20. Describe about the classification and characteristics of industrial effluents.
21. Write about the design and construction of water filtration devise for wastewater aquaculture.
22. Describe about marine pollution monitoring strategies.
23. Discuss about global warming and climate change.