R7345	Sub. Code
	547301

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

Third Semester

Fisheries Science

SHELLFISH AND FINFISH HATCHERY MANAGEMENT

(CBCS – 2021 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. LRT
2. GIFT
3. PL
4. Quarantine
5. Selective breeding
6. SPF
7. LHRH
8. Fresh water mussel
9. Spawner
10. Glochidia

Part B (5 × 5 = 25)

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

11. (a) Write a note on biology and lifecycle of cultivable *Penaeus monodon*.

Or

(b) Explain current international and national status of bivalve hatchery technology.

12. (a) Write a note on site selection, design and construction of a hatchery.

Or

(b) Explain:

(i) Quarantine

(ii) Live feed

(iii) UV filter

13. (a) Explain seed production and brood stock management of lobsters.

Or

(b) Explain

(i) HACCP

(ii) SPR

(iii) Induced breeding

14. (a) Elaborate the seed production technology of oysters and pearl oysters.

Or

(b) Explain brood stock collection and breeding of mud crab.

15. (a) Write a note on seed production of Fresh water prawns.

Or

(b) Explain nursery technology of fin fishes.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain constraints and current status of fresh water pearl production.

17. Describe various filters used in hatchery and its importance.

18. Explain seed production of GIFT tilapia.

19. Detailed note on seed production and brood stock collection of abalone.

20. Write a note on finfish seed production and brood stock development of cold water fishes.

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R7346	Sub. Code
	547302

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

Third Semester

Fisheries Science

COASTAL AQUACULTURE AND MARICULTURE

(CBCS – 2021 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All question carry equal marks.

1. Shell fish
2. Economic importance of coastal aquaculture
3. Pen culture
4. Differentiate Mariculture from Aquaculture
5. Seaweed
6. RAS
7. Bouchot
8. Bio-fouling
9. FCR
10. Purpose of Biofloc

Part B (5 × 5 = 25)

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

11. (a) Explain the history of coastal aquaculture.

Or

(b) Give an account on various type of culture practiced in coastal areas.

12. (a) Describe the present status of Indian Mariculture

Or

(b) What is cage culture? Explain the various types of cages.

13. (a) Explain the importance of HACCP in shrimp farming.

Or

(b) Describe the methods of seaweed culture.

14. (a) Discuss on the cultivable species of Molluscan.

Or

(b) Write a short note on feed and health management of Molluscs.

15. (a) Explain the method of pond preparation of finfish farming.

Or

(b) Give a short note on the importance of RAS in finfish farming.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

All questions carry equal marks.

16. What is mean by sustainable aquaculture and why it is needed?

17. Describe the national and international regulation on mariculture.

18. Narrate the method of Biofloc technology in shrimp farming.

19. Give a detailed account on various types of methods used in culture of molluscs.

20. Describe the Biosecurity procedure for fish farming.

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R7347	Sub. Code
	547303

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

Third Semester

Fisheries Science

AQUARICULTURE AND LIVE FEED PRODUCTION

(CBCS – 2021 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Exotic species
2. Major Freshwater ornamental fishes
3. NFT Aquaponics
4. Aquarium accessories
5. Flower horn fish
6. Selective breeding
7. Artemia cysts
8. TMRL medium
9. List out the organization and its role in fish marketing.
10. Importance of live feed Marketing

Part B (5 × 5 = 25)

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

11. (a) Explain the ecological and economical importance of ornamental fish culture.

Or

(b) Give an account on aquarium plants.

12. (a) Elucidate the major requirements for ornamental hatchery.

Or

(b) Discuss on the major plant and fish species cultured in aquaponics.

13. (a) Explain the breeding and farming of koi carp.

Or

(b) Write a short note on ornamental fish hatchery and fish farm management.

14. (a) Discuss on the major freshwater and marine species of zooplankton for aquaculture.

Or

(b) Write a short note on the quality control of live feed production.

15. (a) Discuss on the government subsidies provided for the fish farming.

Or

(b) Elucidate the role of MPEDA in fish marketing.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Give a detailed account on capture and cultivable ornamental fishery resources.

17. Discuss on the various type of aquaponics system and its importance.

18. Explain the method of cold water ornamental fish production.

19. Give a detailed account on the culture of phytoplankton.

20. Elucidate the national and international status of live feed market.

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R7348	Sub. Code
	547304

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

Third Semester

Fisheries Science

AQUATIC ANIMAL HEALTH AND MANAGEMENT

(CBCS – 2021 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Aquaculture
2. Fin fish
3. Prophylaxis
4. Prebiotics
5. Epizootiology
6. Vaccines
7. Histopathology
8. Veliger larva
9. Brood stock
10. Aerator

Part B (5 × 5 = 25)

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

11. (a) Give an account on national status of finfish diseases.

Or

(b) What is the difference between acquired and innate immunity in fin fish?

12. (a) Briefly explain the bacterial disease which affects the fin fish.

Or

(b) Add a note on the roles of prebiotics and probiotics in fish diseases.

13. (a) Write a note on epizootic ulcerative syndrome.

Or

(b) Give a note on methods of environmental management of fish diseases.

14. (a) What are the most common manual methods to detect hematological disorders?

Or

(b) Describe the management of nutritional diseases occurring in fishes with suitable example.

15. (a) Give an account on SPR stock management.

Or

(b) Write notes on international status of quarantine systems in fishes.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe in detail about cell mediated immune response of shellfish.

17. Give a detailed account on use and abuse of antibiotics related to fish health management.

18. Make a note on general characteristics, transmission, epizootiology, prevention and treatment of any parasitic diseases occurring in marine water fish.

19. Elucidate the various techniques involved in health management of fishes.

20. Elaborate about the various designs of quarantine systems and equipment for shellfish brood stock.

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R7349

Sub. Code
547305

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

Third Semester

Fisheries Science

FISH PROCESSING TECHNOLOGY AND QUALITY ASSURANCE

(CBCS – 2021 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Grading Fish

2. Microbial spoilage

3. Chilling

4. Freezing

5. Types of Canning

6. Solar dryer

7. Pasteurization

8. Chitin and Chitosan

9. OMEGA

10. USFDA

Part B (5 × 5 = 25)

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

11. (a) Explain the history and status of fish processing technology.

Or

(b) Discuss Post harvest management for finfish and shell fishes.

12. (a) Describe the Principal of freezing and their methods.

Or

(b) Elaborate the pasteurization of different fishery products.

13. (a) Explain the history and present status canning processing techniques.

Or

(b) Explain the types of canned fish products.

14. (a) Describe about fishery additives and preservatives.

Or

(b) Explain the method of separation and purification of fish oil.

15. (a) Describe the procedure in quality control and quality assurance in HAACP.

Or

(b) Explain in EPEDA.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the biochemistry of fishes.

17. Explain in detail in preservation of fishes and their fish products.

18. Explain in detail in preparation of fish silage with flow charts.

19. Discuss the good management practice in different fish products.

20. Explain the quality assurance during fish products packing and trading.

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R7350	Sub. Code 547503

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

Third Semester

Fisheries Science

FISH NUTRITION AND FEED TECHNOLOGY

(CBCS – 2021 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Carotenoids

2. Glycogen

3. Metabolic rate

4. Energy budget

5. Pie-hydration

6. Crumbling

7. HACCP

8. FCR

9. Binders

10. Phospholipids

Part B (5 × 5 = 25)

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

11. (a) Briefly explain the importance of vitamins in aquaculture nutrition.

Or

(b) Write short notes on the role of any two minerals in aquaculture nutrition.

12. (a) Describe briefly about preparation of microencapsulated diet.

Or

(b) What are the advantages and disadvantages of dry feed?

13. (a) List out the major nutritional disorders in cultivable fishes.

Or

(b) Explain different grade of formulated feed used for shrimp culture.

14. (a) Highlight importance of anabolic agent in feed formation with suitable examples.

Or

(b) Give an account on conventional method of feed formation and its significance.

15. (a) Explain management practices of fish silage production.

Or

(b) Describe the types of proteins and their significance in fish growth.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the principles of fish nutrition and technology in India.

17. Write details about balanced nutrition in aquaculture.

18. Give detailed account on the various steps involved in pellet feed formation.

19. Write an essay on the national and international status of floating and semi-floating feed.

20. Describe the types of protein and their significance in shrimp growth.

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