R7720	Sub. Code
	547101

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

First Semester

Fisheries Science

INTEGRATED TAXONOMY OF FINFISH AND SHELLFISHES

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

Choose the correct answer:

1. Types name the organization which provides rules for naming animals.

   (a) ICZN (b) ICN

   (c) ICBN (d) IBM

2. What is the term given to a duplicate specimen of original type?

   (a) Lectotype (b) Holotype

   (c) Isotype (d) Neotype

3. Most crustaceans have blue blood due to presence of ————————

   (a) Haemoglobin

   (b) Erythrocruorin

   (c) Haemocynine

   (d) Haemolymph

4. Mantis shrimp is belongs to order

(a) Isopoda (b) Natantia

(c) Brachiura (d) Stomatopoda

5. Chalky type of internal shell of cuttle fish is called as

(a) Fan shell (b) Cuttle bone

(c) Cuttle pad (d) Cuttle stick

6. A poisonous shelled mollusk

(a) Teredo (b) Conus

(c) Xancus (d) Babylonia

7. Which of the following fishes is viviparous?

(a) Salmons (b) Lamprey

(c) Sharks (d) Chimeras

8. This is a migratory fish

(a) Ribbon fish (b) Carp

(c) Salmon (d) Shark

9. AFLP is a

(a) PCR based method

(b) To detect the polymorphism in the DNA

(c) To detects the presence or absence of a fragment

(d) All of these

10. Molecular markers include

(a) RFLP (b) RAPD

(c) AFLP (d) All of these

Part B (5 × 5 = 25)

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

11. (a) Describe about the origin of taxonomy.

Or

(b) Explain the role of fish taxonomist.

12. (a) Write short notes on key characteristics of Penaeidae with suitable examples.

Or

(b) Write an account on key characteristics of Portunidae with suitable examples.

13. (a) Discuss the characteristics of genus Sepia with suitable examples.

Or

(b) Summarize the commercial importance and uses of mollusca.

14. (a) Sketch the morphological characteristics of shark and ray.

Or

(b) Comment on the Mullidae family.

15. (a) Write a short note on Karyo taxonomy of fishes.

Or

(b) Comment on RAPD.

Part C

$(5 \times 8 = 40)$

Answer any **five** questions.

16. Explain about the classification of bony fishes with suitable examples.

17. Write brief notes on fishes preservation, cataloguing and submission in National museums.

18. Write the characteristics of genus Scylla with suitable examples.

19. Discuss about the key characteristics of Loliginidae.

20. Give an account on commercial fishes of Cyprinidae and its current status.

21. Give an account on commercial fishes of Nemipteridae and its status.

22. Comment on micro satellite markers and its role in fisheries sector

23. Illustrate the phylogenetic tree and its applications.

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R7721	Sub. Code
	547102

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

First Semester

Fisheries Science

INLAND FISHERIES

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

All Questions carry equal Marks

1. Coastal line of India is ————————

   (a) 8129km (b) 2229 km

   (c) 4239 km (d) None

2. What is the major resource for Inland capture fish production?

   (a) Reservoirs (b) Rivers

   (c) Wetlands (d) swamps

3. Hirakud reservoir is located on ———————— river

   (a) Ganga (b) Jhelum

   (c) Mahanadi (d) Godavari

4. Which is the largest freshwater lake in Kerala

(a) Koyal (b) Asthamudi

(c) Koleru (d) Sasthamcotta

5. Bhitarkanika mangroves located in

(a) Tamil Nadu (b) Kerala

(c) Karnataka (d) Orissa

6. First Wetland to registered under Montreux record in India ————————

(a) Loktak lake

(b) Chilka lake

(c) Vembanad lake

(d) Keolodeo lake

7. The main tributaries of river Ganga is ————————

(a) Mahanadi (b) Yamuna

(c) Hoogly (d) None

8. Farraka barrage is located on which river

(a) Ganga (b) Brahmaputra

(c) Godavari (d) Mahanadi

9. Scientific name of Golden mahseer

(a) *Tor puttitora* (b) *Tor tor*

(c) *Salmo salar* (d) None

10. Which state first established in Trout hatchery in India

(a) Himachal Pradhesh

(b) Arunachala Pradhesh

(c) Madhya Pradhesh

(d) Andhra Pradhesh

Part B (5 × 5 = 25)

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

Each answer should not exceed one page 250 words

11. (a) History of Inland fisheries in global scenario.

Or

(b) Explain the role of inland fisheries development by Government

12. (a) Give account on the potential inland water bodies in Odisha.

Or

(b) Detail account of potential inland water bodies in Westbengal.

13. (a) Explain about beels and Jheels fishery resources

Or

(b) Given account on the livelihood security in Inland fisheries

14. (a) Explain the direct and indirect effects of present status of fisheries resources of human life.

Or

(b) Write a notes on merits and demerits of exotic species in inland fishery.

15. (a) Explain about present status of cold water fishery in India.

Or

(b) Explain the inland fishery resources in Himalayan.

Part C (5 × 8 = 40)

Answer any **five** questions.

All questions carry equal marks.

Each answer should not exceed two pages

16. Detailed explain in the problems and management of the fisheries resources.

17. Write a note an inland fisheries resources in Maharashtra reservoirs .

18. Explain about the climate change affect the inland fishery.

19. Explain the natural and manmade lakes.

20. Write a essay an merits and demerits of exotic in inland fishery.

21. Detailed account the fish migration and restoration of riverine vegetation.

22. Explain the factors affected in cold water fisheries

23. Detailed about the present status of habitat destruction and management of sport fishery in India.

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R7722	Sub. Code 547103

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

First Semester

Fisheries Science

COASTAL AND MARINE FISHERIES

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

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

1. Bio-invasion

   (a) Species colonize in new geographic region

   (b) Species diversity

   (c) Species richness

   (d) None

2. Marine Protected Area

   (a) Area under conservation

   (b) Area allowed for fishing

   (c) Area allowed for developmental activities

   (d) None

3. Catch quotas in fishing
   (a) Allowed species and sizeable fish for catch
   (b) Irregular fishing
   (c) Restriction in catching of endangered organism's
   (d) None

4. EEZ
   (a) Exclusive Economic Zone
   (b) Environmental Economic Zone
   (c) Executive Economic Zone
   (d) None

5. IUCN
   (a) International Union for Conservation of Nature
   (b) Indian Union for Conservation of Nature
   (c) International Unit for Conservation of nature
   (d) None

6. Tuna fishery
   (a) Related with Pelagic
   (b) Related with Demersal
   (c) Related with Molluscan
   (d) Related with Crustacean

7. Migration
   (a) Movement of organisms from one region to other
   (b) Stagnation of organism's
   (c) Introduction of organism
   (d) None

8. Name a marine fish, which have hatchery technology in India

(a) Cobia (b) Sardine

(c) Mackerel (d) Seerfish

9. CPUE

(a) Catch per Unit Effort

(b) Clearance Per Unit Effort

(c) Catch Per Unit Energy

(d) None

10. Name a Pelagic fish

(a) Sardine (b) Shark

(c) Flatfish (d) Grouper

Part B $(5 \times 5 = 25)$

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

11. (a) What are the major challenges in maintaining multispecies and multi-gear fishing?

Or

(b) Write a note on the conservation strategies of demersal fisheries.

12. (a) Give an short account of the crustacean fishery resources in India.

Or

(b) Write a brief note on the fishery of Lesser Sardines.

13. (a) Describe the major demersal fishery resources of India.

Or

(b) Brief on EEZ concept and its implementation in fisheries

14. (a) Write about Bycatch Reduction Devices.

Or

(b) Comment on the major threats to marine biodiversity.

15. (a) Describe the common characteristics of pelagic resources.

Or

(b) Explain the ecological significance of mangroves.

Part C $(5 \times 8 = 40)$

Answer any **five** questions.

16. Describe the management strategies for highly exploited fish stocks in India.

17. Discuss the ex situ and in situ conservation programmes for endangered fish species in India.

18. Describe the present status of the marine capture fisheries in India and the reasons for near stagnation of fish catch.

19. Write notes on the pelagic resources of India.

20. Describe the different crafts and gears used in marine capture fisheries.

21. Write a note on the impact of climate change on fishery resources and management measures.

22. What is fishery co-management? Explain the different management practices in fisheries.

23. Give a description of the coral reef resources of India, the major threats they facing and conservation strategies.

R7723	Sub. Code 547104

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

First Semester

Fisheries Science

FRESHWATER AQUACULTURE

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the questions.

All questions carry equal marks.

1. Jayanthi Rohu developed by ————————

   (a) CIBA (b) CIFE

   (c) CIFRI (d) CIFA

2. Sucker Catfish is a ————————.

   (a) Exotic fish

   (b) Candidate fish in Aquaculture

   (c) No such fish found in India

   (d) An endemic fish in India

3. Biogas Plant produces Methane from ————————.

   (a) Pig dung

   (b) GNC

   (c) Poultry droppings

   (d) Cow dung

4. CIFA-ICAR located in ———————— state of India.

(a) Puducherry (b) West Bengal

(c) Telengana (d) Odisha

5. *Wallago attu* ———————— fish.

(a) Plankton feeding

(b) Benthic Feeding

(c) Omnivorous

(d) Carnivore

6. Azolla is a ————————

(a) Aquatic fern (b) Herb found in Himalayas

(c) Manila hemp (d) Aquatic Creeper

7. Water hyacinth ————————

(a) Beneficial Aquatic Weed

(b) Not found in India

(c) Nitrogen fixing plant

(d) Nuisance aquatic weed

8. Freshwater pearl produced from a ————————

(a) Gastropod (b) Isopod

(c) Amphipods (d) Bivalve

9. Silver Carp predominantly graze on ————————.

(a) Zooplankton (b) Phytoplankton

(c) Only Pellet Feed (d) Benthic Algae

10. GIFT ————————.

(a) Sterile female (b) Mixed

(c) All female (d) All male

Part B (5 × 5 = 25)

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

All questions carry equal marks.

11. (a) Explain about the different types of lentic water systems.

Or

(b) Briefly discuss intensive culture of fish.

12. (a) Briefly explain about site selection and preparation of fish hatchery.

Or

(b) Write short note on induced breeding methods in fishes.

13. (a) Discuss about commercially important fin fishes.

Or

(b) Write a note on induced breeding.

14. (a) Briefly explain freshwater pearl culture.

Or

(b) Write note on biofloc.

15. (a) Explain about the fed aquaculture.

Or

(b) Briefly explain about the wastewater treatments.

Part C

$(5 \times 8 = 40)$

Answer any **five** questions.

16. Give a detailed account on aquaculture system in India.

17. Explain about the composite fish culture in India.

18. Discuss about freshwater nursery production in India.

19. Describe various health management practices in shrimp nursery.

20. Give a detailed account on the recent management techniques in farming.

21. Explain about the community ponds.

22. Give a detailed account on aquaphonics types and production system.

23. Explain about the prawn nursery coast analysis.

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R7724	Sub. Code
	547501

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022

First Semester

Fisheries Science

AQUATIC ECOLOGY AND BIODIVERSITY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

All the questions carry equal marks.

1. Process of removing toxic pollutant into non-toxic or less toxic form by using microorganism is

   (a) Dio-reclamation

   (b) Bio-Remediation

   (c) Bio-manipulation

   (d) Bio-monitering

2. The Oceans of the world cover ———— Percentage of earth.

   (a) 70.8% (b) 70.2%

   (c) 71% (d) 72%

3. Groups of small land trees that inhabit inter tidal mud flats and estuarine deltas along their tropical and subtropical sea coasts

   (a) Coral reefs (b) Mangroves

   (c) Beels (d) None

4. The tides in Oceans are due to ————

(a) Gravitational attraction of moon and sun

(b) Salinity of water

(c) Rotation of earth

(d) Corialis force

5. Biodiversity can be defined as ————

(a) Presence of single species in an environment

(b) Degree of variation of an life's ecosystem

(c) Weight of all the organisms in an ecosystem

(d) Only (a) and (c)

6. The slowest biogeochemical cycle is ————

(a) Sulphur (b) Potassium

(c) Nitrogen (d) Phosphorus

7. Symbiotic algae associated with coral ————

(a) Spiruline (b) Zooxanthelle

(c) Chetoceros (d) Isochrysis galabana

8. IBI is a scientific tool used to identify _____ problems.

(a) Air pollution (b) Land pollution

(c) Water Pollution (d) Noise Pollution

9. Tsunamis are caused by _____

(a) Cyclone (b) Coriolis Force

(c) Earthquake (d) Rain

10. The principle of GPS positioning is _____

(a) Transposition (b) Radiation

(c) Intersection (d) Analytic Resection

Part B (5 × 5 = 25)

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

All questions carry equal marks.

11. (a) Write a short note on the ecosystem components.

Or

(b) Briefly discuss about the ecological concepts.

12. (a) Briefly explain about different types of biotic features of freshwater ecosystem.

Or

(b) Write short note on ecological importance of seagrass ecosystem.

13. (a) Discuss briefly different types of tides in the marine environment.

Or

(b) Write a note on classification of phytoplankton.

14. (a) Briefly explain about ocean acidification.

Or

(b) Write briefly about global warming and its effects in the ocean.

15. (a) Discuss about types of biodiversity in freshwater.

Or

(b) Explain about the economic appraisal of biodiversity.

Part C

$(5 \times 8 = 40)$

Answer any **five** questions.

16. Elaborate the different components and ecological importance in marine environment.

17. Explain about the aquatic environment structure and functions.

18. Discuss about coral reef ecosystem and its ecological importance.

19. Explain the natural resources and their conservation in marine environment.

20. Give a detailed account on the physical and chemical parameters in the ocean.

21. Explain the different pollution control and management in marine environment.

22. Give a detailed account on nitrogen cycles in the ocean.

23. Describe the factors influencing aquatic biodiversity and concepts of diversity.

———————