S–4553

Sub. Code
23BMB1C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

First Semester

Marine Biology

FUNDAMENTALS OF MARINE BIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Chemical oceanography
2. Hadal zone
3. Diurnal tides
4. Coriolis effect
5. Hardness
6. Biogeochemical cycles
7. Gyre circulations
8. Rotifers
9. Estuary
10. Crustacea

Part B (5 × 5 = 25)

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

11. (a) Briefly explain the marine benthic zonation.

Or

(b) Describe in short about catadromous and anadromous fishes.

12. (a) Write a short note on tides and types of tides.

Or

(b) Give an account on the importance of water quality parameters for aquatic life.

13. (a) Elaborate on the process of upwelling and nutrient enrichment in the ocean.

Or

(b) Write a short note on the chemistry of seawater, freshwater and brackish water.

14. (a) Write a short note on the marine food chain.

Or

(b) Explain the different types of phytoplankton communities.

15. (a) What is significance of the reef ecosystem? Mention the ecosystem services.

Or

(b) Elaborate on the zonation of mangroves from the sea towards freshwater.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain in detail about the oceanic expeditions and their contribution to coastal zone conservation.

17. Write an essay on "ocean currents and climate"

18. Elaborate the role of phytoplankton in carbon sequestration.

19. Write a detailed note on zooplankton classification and the ecological importance.

20. What are the major factors disrupting the coral reef ecosystem? How do they affect the well - being of marine communities?

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S–4558

Sub. Code
23BMB2C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Second Semester

Marine Biology

ANIMAL DIVERSITY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Resting Egg
2. Bipinnaria larva
3. Binary Fission
4. Rotifer
5. Amphioxus
6. Tonaria larva
7. Osmoregulation
8. Paedomorphosis
9. Voice Box
10. Lymph

Part B (5 × 5 = 25)

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

11. (a) Write a short note on the phylum porifera.

Or

(b) Comment on the classification of the phylum arthropoda.

12. (a) Discuss the types of locomotion in invertebrates.

Or

(b) Write notes on the life cycle of artemia with suitable illustrations.

13. (a) Compare the characteristics of prochordata and Hemichordata.

Or

(b) Enumerate the larval forms of prochordates.

14. (a) Write short notes on geological time scale.

Or

(b) Briefly discuss on the aerodynamic of flight in birds.

15. (a) Differentiate the circulatory system in invertebrates and vertebrates.

Or

(b) Write note on the auditory receptors in vertebrates.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the evolutionary link between invertebrate phylum's.

17. Explain the life cycle of rotifer and artemia with neat diagram.

18. Describe the evolutionary significance of prochordates.

19. Describe the parental care in invertebrates with suitable examples.

20. Write an essay on the comparative account of brain in vertebrates.

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S–4559

Sub. Code
23BMB3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Third Semester

Marine Biology

CELL AND DEVELOPMENTAL BIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Lipid bilayer
2. Lamins
3. Cyclin D
4. Cyclin Dependent Kinase 1
5. Meridional Plane
6. Seminiferous tubules
7. Placenta
8. Blastodisc
9. Hematopoietic stem cells
10. IVF

Part B (5 × 5 = 25)

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

11. (a) Write a note on the nuclear envelope

Or

(b) Give an account on golgi apparatus

12. (a) Explain the cell cycle checkpoints in prokaryotes

Or

(b) Summarize the role of cell signaling receptors in signal transduction

13. (a) Give an account on gametogenesis

Or

(b) Write a brief note on the types of egg

14. (a) Discuss the extra-embryonic membranes in chick

Or

(b) Explain the types of regenerations in Planaria

15. (a) Demonstrate the intra-cytoplasmic sperm injection

Or

(b) Give an account on structure, function and control of stem cells.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Elaborate the structure and role of mitochondria in cellular energetics

17. Elaborate the different phases of mitosis with sketch

18. Discuss the process of Gastrulation

19. Highlight the hormonal control of Amphibian metamorphosis

20. Explain the process and different procedures of IVF

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S–4560	Sub. Code
	23BMB3C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024.

Third Semester

Marine Biology

FISHERY BIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. *Mugil cephalus.*
2. Osteichthyes.
3. Ink Sac.
4. Oviparous.
5. Fecundity.
6. Maximum Economic Yield.
7. Ichthyoplankton.
8. Anadromous fish.
9. *In-situ* conservation.
10. CIFA.

Part B (5 × 5 = 25)

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

11. (a) Discuss about major fish group in Indian water.

Or

(b) Explain about the commercially important Fin fishes from Indian water.

12. (a) Describe about morphometric features of a fish with illustration.

Or

(b) Explain about digestive system of a fish with illustration.

13. (a) Write a short note on age and growth of fish.

Or

(b) Explain about maturity and spawning in fishes.

14. (a) What are the biotic and abiotic factors affecting the spawning behaviour of fish.

Or

(b) Describe about migration in fishes.

15. (a) Write a brief account on fishery regulation.

Or

(b) Write about national level organization for fishery conservation and management.

Part C

($3 \times 10 = 30$)

Answer any **three** questions.

16. Write a detailed account on outline classification of fishes.

17. Describe about morphometric and meristic features of fishes with neat diagrams.

18. Write about the age and growth, length and weight and maturity and spawning in fishes.

19. Describe in detail about parental care in fishes.

20. Explain in detail about fishery conservation and management Act.

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