S–5928

Sub. Code
23BMB1C1

B.Sc. DEGREE EXAMINATION, APRIL 2025

First Semester

Marine Biology

FUNDAMENTALS OF MARINE BIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Hydrothermal vents
2. Continental shelf
3. Ferrell cell
4. TDS
5. Calcification
6. Chlorinity
7. Primary productivity
8. *Cladocerans*
9. Heterotrophs
10. *Tunicates*

Part B (5 × 5 = 25)

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

11. (a) Mention any two major international oceanic expeditions.

Or

(b) Explain in brief on ocean floor topography.

12. (a) Give an account of atmospheric pressure cells.

Or

(b) Describe the physical properties of seawater favoring life's existence.

13. (a) Explain the marine silicate cycle with a neat diagram.

Or

(b) Mention the dissolved gaseous components in the seawater.

14. (a) What is primary productivity? Describe the procedure to measure primary productivity.

Or

(b) Explain the zonal distribution of organisms in a sea.

15. (a) Give an account on nutrient cycling in the deep ocean environment.

Or

(b) Write a short note on the advantages of the mangrove ecosystem.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Elaborate on history and advancements in marine biology conservation.

17. Explain in detail - Ocean currents and monsoons.

18. What is organic matter? How do they influence nutrient cycling?

19. Write an essay on inter-relationship between reef communities.

20. Write an essay on "Role and nature of deep-sea microbes"

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S–5933

Sub. Code
23BMB2C1

B.Sc. DEGREE EXAMINATION, APRIL 2025

Second Semester

Marine Biology

ANIMAL DIVERSITY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Radial symmetry.
2. Ctenophora.
3. Bivalvia.
4. Osmoregulation.
5. Urochordata.
6. Notochord.
7. Gill slits
8. Ammocoetes larva
9. Cyclostomata
10. Polkilothermic animals

Part B (5 × 5 = 25)

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

11. (a) Discuss about significance of coelom.

Or

(b) How cilia differ from flagella?

12. (a) Describe the larva of phylum Coelenterata.

Or

(b) Explain the general features of porifera.

13. (a) Write a short notes on cephalochordata.

Or

(b) What are the characteristic features of phylum hemichordata?

14. (a) Describe about the parental care in amphibia.

Or

(b) Explain about general features of phylum chordata.

15. (a) Describe about the outline classification of phylum Chordata.

Or

(b) What are the diagnostic characters of chordates?

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay on locomotory organelles m protozoa.

17. Explain about the different types of symmetry with suitable examples.

18. Describe characteristic features of different prochoradata.

19. Explain accessory respiratory organs in fish.

20. Write an essay on dentition in mammals.

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S–5934

Sub. Code
23BMB3C1

B.Sc. DEGREE EXAMINATION, APRIL 2025

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. Lysosomes
2. Inner mitochondrial membrane
3. Cyclin A
4. Cyclin Dependent Kinase 2
5. Equatorial plane
6. Alecithal egg
7. Neural crest cells
8. Metamorphosis
9. Pluripotent
10. Stromal cells

Part B (5 × 5 = 25)

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

11. (a) Emphasize the importance of nuclear pore complex.

Or

(b) Explain the Centrosomes.

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

Or

(b) Explain the mechanism of signal transduction.

13. (a) Give an account on Oogenesis.

Or

(b) Explain the blastula.

14. (a) Write a note on regenerations.

Or

(b) Discuss the implantation of embryo in Humans.

15. (a) Explain the process of IUI.

Or

(b) Discuss the cartilage regenerations.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss the structural architect of the euchromatin.

17. Elaborate the different phase of meiosis with neat sketch.

18. Discuss the process of organogenesis.

19. Summarize the development of brain and eye in Chick.

20. Elaborate the process of stem cell therapy in bone marrow transplant.

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S–5935

Sub. Code
23BMB3C2

B.Sc. DEGREE EXAMINATION, APRIL 2025

Third Semester

Marine Biology

FISHERY BIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Nephridium.
2. Ink sac.
3. Viviparous.
4. Placoid scale.
5. Maximum Sustainable Yield.
6. Spawning.
7. Catadromous fish.
8. Meroplankton.
9. CIFE.
10. *Ex- situ* conservation.

Part B (5 × 5 = 25)

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

11. (a) Explain the different types of coeloms.

Or

(b) Describe the tracheal system of insects.

12. (a) Describe the characteristic features of Rotifera.

Or

(b) Write a short note on minor phyla pogonophora.

13. (a) What are the characteristics of Urochordata?

Or

(b) Write a note on the feature of cephalochordate.

14. (a) Explain about the migrations in birds.

Or

(b) Write about the classifications in Pisces.

15. (a) Write a short note on respiratory organs in fish.

Or

(b) Explain about olfactory and auditory receptors in vertebrates.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe mode of locomotion in protozoans.

17. Write an essay on larvae echinodermata and its evolutionary significance.

18. Explain about origin and classification of hemichordata.

19. Write an essay on adaptive radiation in mammals.

20. Describe about the comparative account of brain in vertebrates.

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S–5936

Sub. Code
23BMB4C1

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fourth Semester

Marine Biology

ANIMAL PHYSIOLOGY AND BIOCHEMISTRY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Regurgitation
2. Suspension feeder
3. Y organ
4. Ecdysis
5. Ammoniotelic
6. Balanoglossus
7. Gibbs free energy
8. Protein motifs
9. Liposomes
10. Phospholipids

Part B (5 × 5 = 25)

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

11. (a) Write a short note on the feeding habits of aquatic organisms.

Or

(b) Elaborate on mouth parts of shrimps.

12. (a) Explain the oxygen dissociation curve with the help of a diagram.

Or

(b) Explain the respiratory adaptations in fishes.

13. (a) Define the term bioluminescence with examples.

Or

(b) Define the term biological clock with examples.

14. (a) Elaborate Henderson - Hasselbalch equation.

Or

(b) Give structural elucidation of amino acids.

15. (a) Give an account on the functions of lipids in an animal body.

Or

(b) What is the biological significance of cholesterol? Explain.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write a detailed note on the digestive enzymes of marine organisms.

17. Explain the hormonal control mechanisms in crustacean molting.

18. What is the significance of pigments in marine animals? Give examples of pigments.

19. Write detailed notes on the structural organization of protein molecules.

20. Elaborate on classification and functions of lipids.

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S–5937

Sub. Code
23BMB4C2

B.Sc. DEGREE EXAMINATION, APRIL 2025

Fourth Semester

Marine Biology

AQUACULTURE

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Mariculture
2. CIBA
3. Feeder canal
4. IMTA
5. Backyard hatchery
6. Copepods
7. Raceways
8. Fin rot
9. Extruded feed
10. NFDB

Part B (5 × 5 = 25)

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

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

Or

(b) Describe the current scenario of inland aquaculture in India.

12. (a) Brief the various criteria for the selection of site for aqua farm.

Or

(b) Narrate the cause and controlling strategies of evaporation in aqua pond.

13. (a) What is bioflocs? Explain its working principle.

Or

(b) Discuss on the economic importance of seaweeds.

14. (a) Elaborate the method of culture of rotifer.

Or

(b) Describe the various components of shrimp hatchery.

15. (a) Give an account on various feed ingredients and its nutritive value.

Or

(b) Explain the role NGO's in fisheries development.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe on the various socio-economic issues in fisheries and aquaculture sector.

17. Explain the steps involving in induced breeding and larval rearing of *Lates calcarifer*.

18. Discuss on the construction and operation of semi-intensive shrimp farming.

19. Elaborate the methods of aqua feed formulation and preparation.

20. Brief the method of diagnosis and controlling measures of epizootic ulcerative syndrome in fish.

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