S–2794

Sub. Code
23BMB1C1

B.Sc. DEGREE EXAMINATION, APRIL 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. Charles Darwin
2. HMS Beagle
3. Thermocline layer
4. Tides
5. Dissolved oxygen
6. Salinity
7. Copepods
8. Diatoms
9. Micro-algae
10. Demersal zone

Part B (5 × 5 = 25)

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

11. (a) Describe about the modern developments in Oceanography.

Or

(b) Write a short account on benthic zone and its importance.

12. (a) Write a short notes on oceanic currents.

Or

(b) Explain about ocean temperature and its significance.

13. (a) Write about the dissolved elements in seawater.

Or

(b) Explain about nitrogen cycle and its significance.

14. (a) Describe about the distribution and classification of phytoplankton.

Or

(b) Write a brief note on secondary productivity.

15. (a) Explain about the coral reef ecosystem and its importance.

Or

(b) Describe about deep-sea ecology and its significance.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay on national and international ocean expeditions.

17. Describe in detail – Physical properties of seawater.

18. Describe about the concept of chlorinity and salinity of seawater.

19. Write an essay on measurement of primary productivity with neat illustration.

20. Describe about the various coastal ecosystems and its importance.

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S–2795	Sub. Code
	23BMBA1

B.Sc. DEGREE EXAMINATION, APRIL 2024

First Semester

Marine Biology

Allied — FUNDAMENTALS OF MARINE BIOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Challenger expedition
2. Intertidal zone
3. Phytoplankton
4. Secchi disk
5. Bioluminescence
6. Spring tide
7. Great Barrier Reef
8. Secondary productivity
9. Intertidal ecosystem
10. Pneumatophores

Part B (5 × 5 = 25)

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

11. (a) Write a short note on plate tectonics.

Or

(b) Write a brief account on sea bottom topography.

12. (a) Explain about the tides and its types with illustration.

Or

(b) Write a short note on seawater density and its significance.

13. (a) Explain about the major elements in seawater.

Or

(b) Write a note on concept of chlorinity.

14. (a) Explain about the divisions of oceanic environment.

Or

(b) Write a note on classification of zooplankton with neat illustrations.

15. (a) Write a short note on hydrothermal vent.

Or

(b) Explain about intertidal ecosystem and its importance.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe about the recent developments in marine science.

17. Write a detailed note on physical properties of seawater.

18. Explain about biogeochemical cycles and its significance.

19. Describe about types of coral reef ecosystem with neat illustrations.

20. Explain about the environmental condition and animal adaptations in the intertidal region.

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S–2796

Sub. Code
23BMB2C1

B.Sc. DEGREE EXAMINATION, APRIL 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. Antennae
2. Hermaphrodite
3. Conjugation
4. Pseudopodia
5. Ascidian
6. Notochord
7. Agnatha
8. Metamorphosis
9. Nephron
10. WBC

Part B (5 × 5 = 25)

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

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

Or

(b) Comment on the classification of Platyhelminthes.

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

Or

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

13. (a) Discuss in detail on the morphology of Urochordata.

Or

(b) Enumerate the evolutionary significance of prochordata.

14. (a) Write short notes on parental care in amphibia.

Or

(b) Briefly discuss on the adaptive radiation in mammals.

15. (a) Differentiate the respiratory organs in fish and birds.

Or

(b) Explain the circulatory system in mammals.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the interrelationship among the classes with in each invertebrate phylum.

17. Give a detailed account on the reproduction in invertebrates.

18. Explain the principles and classification of prochordata.

19. Describe the digestive system in invertebrate and vertebrates with suitable illustrations.

20. Write an essay on nervous system of mammals.

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S–2797

Sub. Code
23BMBA2

B.Sc. DEGREE EXAMINATION, APRIL 2024

Marine Biology

Allied – MARINE RESOURCES

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Tidal energy
2. Fossil fuels
3. Polymetallic nodules
4. Limestone
5. Overfishing
6. *Portunus pelagicus*
7. Porifera
8. Bivalve
9. Lion fish
10. Sea snake

Part B (5 × 5 = 25)

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

11. (a) Give a brief note on distribution of different kind of resources in Indian oceans.

Or

(b) Difference between renewable and non-renewable resources.

12. (a) Explain about minerals found in sea floor.

Or

(b) Write a short note on polymetallic nodules.

13. (a) Discuss about deep sea fisheries.

Or

(b) Write a short note on fishing vessel management.

14. (a) Briefly explain about marine drugs.

Or

(b) Write the procedure for extraction of bioactive compounds from marine microbes.

15. (a) Write the various types of marine biotoxins.

Or

(b) Explain the various source of organisms for venom isolation.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay on marine resources in India.

17. Give a detailed account on minerals and their deposits.

18. Explain about the fisheries resources in Indian Ocean.

19. Describe the classification of marine drugs.

20. Classify the marine biotoxins based on their chemical structure.

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S–2798

Sub. Code
23BMBA3

B.Sc. DEGREE EXAMINATION, APRIL 2024

Marine Biology

Allied – MARINE POLLUTION

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Persistent organic pollutants
2. Pollutant
3. Activated sludge
4. Municipal wastes
5. BTEX
6. Ghost net
7. Biomagnification
8. Pesticide drift
9. Heavy metals
10. Bioindicators

Part B (5 × 5 = 25)

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

11. (a) Explain briefly about types of marine pollution.

Or

(b) What are organic pollutants? How do they reach the marine environment?

12. (a) Explain about the biological treatment of sewage water.

Or

(b) Describe the paper industry waste management system.

13. (a) Write the impacts on marine organisms by thermal pollution.

Or

(b) Give an account on the sources of thermal pollution.

14. (a) What is meant by bioaccumulation? Describe the factors favouring bioaccumulation.

Or

(b) Write a short note on pesticides with suitable examples.

15. (a) Describe the impact of chromium as a pollutant.

Or

(b) Give an account on the impact of heavy metals on marine ecosystem.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

All questions carry equal marks.

16. Write an essay on deposition of pollutants in marine sediments and adverse effects on benthic organisms.

17. Write an elaborate note on sewage and water pollution leading to the death of aquatic organisms.

18. What are the components and consequences of oil spills? Mention a treatment method.

19. What are the advantages and disadvantages of bio-pesticides over synthetic pesticides in crop production?

20. Write an essay on the role of filter feeders and bottom feeders as pollution bio indicators.

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S–2799

Sub. Code
23BMBA4

B.Sc. DEGREE EXAMINATION, APRIL 2024

Marine Biology

Allied – AQUARIUM FISH KEEPING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions

1. Exotic fish
2. Mollusca
3. Aerator
4. Aquarium
5. Live feed
6. Probiotics
7. Fin rot disease
8. Viral Hemorrhagic Septicemia
9. Packaging
10. Breeding

Part B (5 × 5 = 25)

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

11. (a) Give a brief account on types of aquarium.

Or

(b) Write a short note on the identification of ornamental fishes.

12. (a) Explain about construction of marine water aquarium.

Or

(b) Briefly describe the essential equipment's required to set up an aquarium.

13. (a) Write the basic steps involved in the preparation of formulated fish feed.

Or

(b) Give a short note on water quality management in aquarium.

14. (a) Write a short account on bacterial diseases and their preventive measure.

Or

(b) Comment on fungal diseases and control.

15. (a) Brief description about hatchery design and construction.

Or

(b) Description on genetics application in aquarium fish production

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay on ornamental fish trade in India.

17. Give a detailed account on design and construction of aquarium.

18. Give an elaborate explanation on feed formulation techniques.

19. Describe about viral diseases and their control.

20. Explain the oxygen packing technique of fish transportation.

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