S–2163	Sub. Code
	22BMB1C1

B.Sc. DEGREE EXAMINATION, APRIL 2024

First Semester

Marine Biology

FUNDAMENTALS OF MARINE BIOLOGY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Charles Darwin
2. HMS Challenger
3. Thermocline layer
4. Ocean current
5. Dissolved gases
6. pH
7. Dinoflagellates
8. Decomposer
9. Macro-algae
10. Benthic 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 pelagic zone and its importance.

12. (a) Write short notes on major Oceanic currents.

Or

(b) Explain about waves and its types.

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

Or

(b) Explain about carbon cycle and its significance.

14. (a) Describe about the classification of phytoplankton with illustration.

Or

(b) How do you measure the primary productivity?

15. (a) Write a short note on coral reef ecosystem and its importance.

Or

(b) Explain about the 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 expedition.

17. Write an essay on physical properties of seawater.

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

19. Write an essay on measurement of primary and secondary productivity.

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

———————

S–2165

Sub. Code
22BMB2C1

B.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

Marine Biology

ANIMAL DIVERSITY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Connecting links.
2. Protostomes.
3. Pseudopodium.
4. Cnidaria.
5. Prochordata.
6. Evolutionary tree.
7. Mesozoic era.
8. Arboreal forms.
9. Uropygial glands.
10. Organ of Corti.

Part B (5 × 5 = 25)

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

11. (a) Give a short note on the origin of invertebrates.

Or

(b) Discuss the interrelationship between the phylum Porifera and Cnidaria.

12. (a) Give an account of the feeding mechanism in marine sponges.

Or

(b) Explain the asexual reproduction in jellyfish.

13. (a) Write briefly about the characters of Urochordata.

Or

(b) Discuss the reproduction mode of Tunicates.

14. (a) Explain the evolutionary pattern of Amphibia.

Or

(b) Classify the amphibians up to order level.

15. (a) Illustrate gill and lung respiration in fishes.

Or

(b) Describe olfactory receptors in vertebrates.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Classify the animals up to class level.

17. Illustrate the anatomy of the Chaetognatha.

18. Write an essay on the phylogeny of Hemichordates.

19. Explain parental care in amphibians.

20. Discuss derivatives and integuments in birds.

———————

S–2167

Sub. Code
22BMB3C1

B.Sc. DEGREE EXAMINATION, APRIL 2024

Third Semester

Marine Biology

CELL AND DEVELOPMENTAL BIOLOGY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. 70S ribosome.
2. Cholesterol
3. Metaphase
4. Cyclin
5. Meroblastic cleavage
6. Involution
7. Inner Cell membrane
8. Epimorphosis
9. IUI
10. Embryonic stem cells

Part B (5 × 5 = 25)

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

11. (a) Give an account on Mitochondria.

Or

(b) Comment on nuclear pore complex.

12. (a) Explain the meiosis -I.

Or

(b) Comment on apoptosis.

13. (a) Explain the spermatogenesis.

Or

(b) Give an account on the different types of egg.

14. (a) Comment on nuclear transplant in Acetabularia.

Or

(b) Write a note on extra embryonic membrane in Chick.

15. (a) Comment on ICSI.

Or

(b) Explain the concept of potency.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Tabulate the characteristics of features of prokaryotic and eukaryotic organisms

17. Compare the cell cycle and control in prokaryotic and eukaryotic organisms.

18. Give a note on planes and pattern of Cleavage.

19. Explain the regeneration in Amphibion and Planaria.

20. Explain the role of stem cell therapy in Cartilage regeneration.

———————

S–2168

Sub. Code
22BMB3C2

B.Sc. DEGREE EXAMINATION, APRIL 2024

Third Semester

Marine Biology

FISHERY BIOLOGY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

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

Part B (5 × 5 = 25)

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

11. (a) Write a brief account on classification of shell fishes.

Or

(b) Discuss about major fish group in Indian water.

12. (a) Write about the key characters for fish identification.

Or

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

13. (a) Write about age and growth relationship in fishes.

Or

(b) Explain about underfishing and overfishing.

14. (a) Write an account on biotic factors affecting fish spawning.

Or

(b) Explain the different juvenile stages of shell fishes.

15. (a) Write a short note on principle of fish conservation.

Or

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

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write essay on distribution of commercially important fishes in Indian waters.

17. Describe about morphometric and meristic characters 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 - Migration in fishes.

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

———————

S–2169

Sub. Code
22BMB4C1

B.Sc. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Marine Biology

ANIMAL PHYSIOLOGY AND BIOCHEMISTRY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Chiton
2. Nauplius
3. Hemocyanin
4. Tracheal gill
5. Bioluminescence
6. Lunar periodicity
7. Entropy
8. Stereoisomerism
9. Fatty acid
10. LDL

Part B (5 × 5 = 25)

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

11. (a) Write a note on transport of food in marine organism.

Or

(b) Comment on digestive system in crustacean.

12. (a) Give an account on physiology of nervous system in fishes.

Or

(b) How O_2 and CO_2 transport in marine organism?

13. (a) Explain the mechanism of urine formation.

Or

(b) Comment on chromatophore and its significance.

14. (a) How will you classify the amino acids? – Explain.

Or

(b) Explain the acid base balance in marine organism.

15. (a) Write a note on chemical bonds and its significance.

Or

(b) Explain the types of fatty acids.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the food and feeding mechanism of fishes.

17. Elaborate the characteristics and functions of the neuronal and growth hormones.

18. Give an account on excretion in marine organism.

19. Explain the structure and function of protein.

20. Explain the structure, synthesis and biological significance of HDL and LDL.

———————

S–2170

Sub. Code
22BMB4C2

B.Sc. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Marine Biology

AQUACULTURE

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. CMFRI
2. Cage culture
3. Sluice gate
4. IMTA
5. Bioflocs
6. Gas bubble disease
7. Brood stock
8. Live feed
9. Feed conversion ratio
10. Microdiets

Part B (5 × 5 = 25)

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

11. (a) Write a short note on diseases in aquaculture.

Or

(b) Describe about the importance of coastal aquaculture.

12. (a) Explain about pen culture.

Or

(b) Describe about the suitable soil for aquaculture.

13. (a) Write about the different methods involved in seaweed culture.

Or

(b) Write a brief account on intensive aquaculture practises in shell fish farming.

14. (a) What are the different types of hatcheries?

Or

(b) Describe about the importance of live feed culture.

15. (a) Explain about feed ingredients and nutritive value.

Or

(b) Write a brief note on feed formulation procedure.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write a detailed account on present status of aquaculture in India.

17. Explain in detail about open sea farming and its types.

18. Describe in detail – Fish farm management.

19. Write an essay on shell fish hatchery and its management.

20. What are the role of non-governmental agencies in fisheries development.

———————