F–9143

Sub. Code
7BMB2C1

B.Sc. DEGREE EXAMINATION, APRIL 2023

Second Semester

Marine Biology

VERTEBRATE

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Gnathostomata

2. Fangs

3. Epoch and Eon

4. Adaptive radiation

5. Fossils

6. Synapsid

7. Morula

8. Placoid scale

9. Epiboly

10. Aortic arches — Frog

Part B (5 × 5 = 25)

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

11. (a) Classify the reptiles with salient features.

Or

(b) Write about the features of Poisonous snakes.

12. (a) Give an account on evolution of vertebrates with the help of geological time scale.

Or

(b) Explain the structure and adaptive radiation of elasmobranchs.

13. (a) Write about the origin of amphibians.

Or

(b) Give a note on adaptive radiation reptiles.

14. (a) Write about the process of fertilization of egg.

Or

(b) Give an account on types of scales in fishes.

15. (a) Explain the development of aortic arches in frog.

Or

(b) Define fate map and its role in fish embryology.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Give a detailed account on mechanism of biting along with its parts.

17. Give an account on origin and evolution of vertebrates.

18. Write about the process of origin and effect of terrestrialization in amphibians.

19. Give an account on classification of different classes of mammals.

20. Write about the different types of process involved in the development of fish.

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F–9144	Sub. Code
	7BMB2C2

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Marine Biology

ANIMAL PHYSIOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Live feed

2. Proteinase

3. Lamellae

4. Myoglobin

5. DHEA

6. Lateral line

7. Bioluminescence

8. Circadian rhythms

9. Protandrous hermaphrodite

10. Guanine

Part B (5 × 5 = 25)

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

11. (a) Describe the feeding mechanism of corals.

Or

(b) Explain about various types of food available for marine organisms.

12. (a) What are the secondary respiratory organs? Explain their role in respiration.

Or

(b) Discuss the mechanism of respiration in aquatic organisms.

13. (a) Elucidate the structure of nervous system in marine fish.

Or

(b) Narrate the physiology of endocrine system.

14. (a) Brief the role of chromatophores in colour changes of ornamental fishes.

Or

(b) Elaborate on the luminescent glands and organs.

15. (a) Explain the method of reproduction in prawn.

Or

(b) Discuss the way of nitrogenous wastes elimination in fish.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the food and feeding behaviour of shrimp.

17. Elucidate the various factors affecting respiration in fish.

18. Descript the various types of sense organs and their functions.

19. Write an essay on osmotic regulation and ion regulation.

20. Elaborate on the sexual maturation and breeding of fish *Lates calcarifer*.

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F–9145

Sub. Code
7BMB3C1

B.Sc. DEGREE EXAMINATION, APRIL 2023

Third Semester

Marine Biology

CELL BIOLOGY AND GENETICS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Fluid Mosaic model
2. Nonfacilitated diffusion
3. Chromatin condensation
4. Enzyme-linked Receptors
5. Initiation codon
6. Abiogenesis
7. Z–DNA
8. Intracellular Pangenesis
9. Release factor
10. Dihydrouridine

Part B (5 × 5 = 25)

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

11. (a) Describe Prokaryotic cell structure.

Or

(b) Explain the structure and function of the Golgi apparatus.

12. (a) Give an account of mitosis cell division.

Or

(b) What is apoptosis? Explain.

13. (a) Discuss the composition of DNA.

Or

(b) Give a short note on semi conservative model of DNA.

14. (a) Explain the molecular structure of RNA.

Or

(b) Explain shortly on genetic engineering.

15. (a) Discuss different types of cells.

Or

(b) Give an account genetic code and its significance.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the structure and function of mitochondria and chloroplasts.

17. Give a detailed account of cell signaling.

18. Explain the process of DNA replication in eukaryotes.

19. Write a detailed account of the structure and function of a gene.

20. Discuss the translation mechanisms of nuleic acids.

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F–9146

Sub. Code
7BMB4C1

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Marine Biology

ENVIRONMENTAL BIOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Biotic factors.

2. Food-chain.

3. Monoclimax.

4. Commensalism.

5. Atoll ecosystem.

6. Detritivores.

7. Hydrosphere.

8. Global warming.

9. Ocean acidification.

10. Environmental education.

Part B (5 × 5 = 25)

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

11. (a) Write a note on energy flow in the ecosystem.

Or

(b) Explain about the ecological complexity and stability.

12. (a) Explain about geometric population.

Or

(b) Describe about ecological succession.

13. (a) Explain about the abiotic components of the ecosystem.

Or

(b) Write a note on (i) Seaweeds (ii) Seagrass

14. (a) Describe about organic nutrients.

Or

(b) What is biogeochemical cycles? Explain with examples.

15. (a) Explain about environment awareness.

Or

(b) What are the impacts of global warming on marine life?

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write detailed notes on ecosystem and review of the ecosystem.

17. Describe about the interspecific interactions with suitable examples,

18. Explain about the extreme habitates with examples.

19. Write detailed notes on nitrogen cycles.

20. Describe the laws related to environmental protection.

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F–9147

Sub. Code
7BMB6C1

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Marine Biology

FISHERY BIOLOGY AND BIOSTASTICS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Elasmobranchi.
2. Agnatha.
3. *Chanos chanos*
4. Potential fishing zone.
5. Adipose fin
6. Lateral line
7. Maximum sustainable yield.
8. Harvest Control Rule
9. ANCOVA
10. Chi – Square test.

Part B (5 × 5 = 25)

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

11. (a) Write about the general characteristic features of class Osteichthyes.

Or

(b) What are the morphological features of order tetraodontiformes.

12. (a) Describe about the commercial marine shell fish fisheries resources in Tamil Nadu.

Or

(b) Explain about the oil sardine fisheries resources in India.

13. (a) Write about the different types of caudal fins with neat illustrations.

Or

(b) Explain about the various fish body shape with suitable diagrams.

14. (a) Explain about the acoustic fish survey.

Or

(b) Describe about fish tagging.

15. (a) Explain about multi – variate analyses.

Or

(b) Write a short note on correlation and regression analyses.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain about the major groups of fishes in world water.

17. Write about the present status of mackeral fisheries in India.

18. Write an essay on maturation and spawning of marine fishes in Bay of Bengal water.

19. Describe about the fish survey methods.

20. How do you analyses your fisheries data using Microsoft Excel.

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F–9148

Sub. Code
7BMB6C2

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Marine Biology

BIODIVERSITY AND CONSERVATION

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Explain about genetic diversity.
2. IUCN
3. Intertidal area
4. Species richness
5. Alien species
6. Global warming
7. Bioactive compounds
8. Antibiotic compounds
9. Biotoxin
10. Marine cartenoids

Part B (5 × 5 = 25)

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

11. (a) Write about the biodiversity changes in time and space.

Or

(b) Describe about the ecosystem diversity.

12. (a) Explain the species concept.

Or

(b) Brief note on littoral and sublittoral seaweeds.

13. (a) What are the threats due to introduction alien species.

Or

(b) Explain about global climate change.

14. (a) Write a short note on antibiotic compounds from marine animals.

Or

(b) Explain about nitrogenous compounds.

15. (a) What are the types of toxins?

Or

(b) Explain about the sterols of marine invertebrates.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay on "Marine Biodiversity"

17. Describe in details – Coastal vegetation.

18. Write an essay on over exploitation of marine resources and its impacts.

19. Describe the sources and importance of marine drugs.

20. Write about the toxins from marine animals.

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F–9150

Sub. Code
7BMBE3B

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Marine Biology

Elective: AQUARIUM KEEPING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Aquarium

2. Ornamental Fish

3. Pumps

4. Lights

5. pH of aquarium water

6. Fish Foods

7. Fin rot

8. Saprolegniosis

9. Broodstock

10. Spawning tank

Part B (5 × 5 = 25)

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

11. (a) Elaborate the importance of Aquarium.

Or

(b) How will you identify the Ornamental Crustaceans.

12. (a) How will you design and construct a marine aquarium?

Or

(b) What are the materials and methods used for setting up the aquarium.

13. (a) How criteria for selection of ornamental fishes set-Discuss.

Or

(b) How will you manage the quality of aquarium water?

14. (a) Describe the list of fungal diseases of aquarium fishes.

Or

(b) What measures will you adopt to control the bacterial diseases of ornamental fishes.

15. (a) Write a note on the conditions and requirement for breeding of ornamental fishes.

Or

(b) How will you design the hatchery unit and how will construct it?

Part C (3 × 10 = 30)

Answer any **three** of the following questions.

16. Comments on the following:

    (a) Ornamental fishes

    (b) Ornamental Molluscs.

17. How will you design and construct the freshwater aquarum and list out the methods used for it.

18. Explain the fish foods and its types.

19. Explain the treatments available against bacterial and fungal diseases of ornamental aquarium fishes.

20. Explain the packaging of transport of ornamental fishes and state its economical importance.

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