

**F-5096**

**Sub. Code**

**7BMB2C1**

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Second Semester**

**Marine Biology**

**VERTEBRATE**

**(CBCS – 2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Pisces.
2. Ectotherms.
3. Chondrithyes.
4. Crocodilia.
5. Viviparous.
6. Morula.
7. Sirenia.
8. Cleavage.
9. Ctenoid scale.
10. Fate map.

**Part B**

(5 × 5 = 25)

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

11. (a) Explain the salient features of marine reptiles.

Or

- (b) Write about the poisonous and non-poisonous snakes.

12. (a) Write the external features of a bony fish.

Or

- (b) Give a detailed account on classification and general features of elasmobranches.

13. (a) What are the effects of terrestrialization on amphibians?

Or

- (b) Discuss about the evolution on reptiles.

14. (a) Write about the salient features and classification of sea birds.

Or

- (b) Give an account on development of placoid scale.

15. (a) Write about the development of respiratory organs in frog.

Or

- (b) Explain the morphogenetic movements in gastrula of fish.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Describe the general features and classification of Amphibia.
  17. Write an essay on structure, function and adaptive radiation of elasmobranches.
  18. Write an essay on general features and classification of reptiles.
  19. Give a detailed note on gametogenesis and post fertilization development of fish.
  20. Explain the various types of eggs and fertilization of eggs.
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**F-5097**

**Sub. Code**

**7BMB2C2**

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Second Semester**

**Marine Biology**

**ANIMAL PHYSIOLOGY**

**(CBCS – 2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Crustacean.
2. Amylase.
3. Salinity.
4. Respiratory pigments.
5. Traditional sense.
6. Pituitary gland.
7. Bioluminescence.
8. Chromatophores.
9. Nitrogenous waste.
10. Mammalian reproduction.

**Part B**

(5 × 5 = 25)

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

11. (a) Explain feeding mechanisms of molluscs.

Or

- (b) Write a short note on zooplanktons.

12. (a) Briefly discuss about aquatic respiration.

Or

- (b) Write a short note on secondary respiratory organs.

13. (a) Describe the sense organs in marine fishes.

Or

- (b) Explain - The moulting process.

14. (a) Write a short note on biological clocks.

Or

- (b) Discuss about the luminescent glands functions.

15. (a) Write a short note on nitrogen excretion.

Or

- (b) Explain about mode of elimination of nitrogenous waste.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Briefly discuss about digestive enzymes in marine organisms.
  17. Explain the factors affecting the aquatic animal respiration.
  18. Give a detailed account Physiology of endocrine system.
  19. Briefly discuss about osmotic and ion regulations.
  20. Give a detailed account on reproduction in marine animals.
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**F-5098**

**Sub. Code**

**7BMB3C1**

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &  
Supplementary/Improvement/Arrear Examinations**

**Marine Biology**

**CELL BIOLOGY AND GENETICS**

**(CBCS – 2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Prokaryotic
2. Nucleolus
3. Meiosis
4. Cell signaling
5. Protein
6. DNA replication
7. Gene
8. Genetic code
9. Cell division
10. Translation

**Part B**

(5 × 5 = 25)

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

11. (a) Differentiate prokaryotic and eukaryotic cells.

Or

- (b) Explain the structure of functions of nucleus.

12. (a) Describe – Cell division.

Or

- (b) Briefly explain the cell cycle of eukaryotes.

13. (a) Give an account on composition of protein.

Or

- (b) Explain the structure and functions of DNA.

14. (a) Write a short note on historical development of genetic study.

Or

- (b) Explain – Genetic engineering.

15. (a) Briefly explain about the mechanisms of translation.

Or

- (b) Give an account Ultra structure of cytoplasmic inclusion.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Briefly describe about the structure and functions of cell membrane.
  17. Write an essay on Cell division.
  18. Briefly describe about DNA replication in eukaryotic cell.
  19. Discuss about prospects in chromosomal manipulation.
  20. Explain in detail about mechanisms of translation.
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**F-5099**

**Sub. Code**

**7BMB4C1**

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Fourth Semester**

**Marine Biology**

**ENVIRONMENTAL BIOLOGY**

**(CBCS – 2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Primary production.
2. Detritivores.
3. Catadromous migration.
4. Ecological succession.
5. Euryhaline.
6. *Rhizophora apiculata*.
7. Non-essential elements.
8. Nitrogen cycle.
9. Heavy metals.
10. Biodegradation.

**Part B**

(5 × 5 = 25)

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

11. (a) How does energy flow in the ecosystem?

Or

- (b) Explain about ecological niche.

12. (a) What is Climax. Describe the types of climax theory.

Or

- (b) Explain about inverted pyramids.

13. (a) Explain the physico-chemical features of marine environment.

Or

- (b) Describe the coral reef as specialized Oceanic ecosystem.

14. (a) Describe about nitrogen biogeochemical cycle with suitable example.

Or

- (b) What are the biological effects of environmental pollution?

15. (a) Write short notes on the following.

- (i) Global warming.
- (ii) Biomagnifications.

Or

- (b) What are the effects of climate change on marine environment?

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Describe about the significance of ecological pyramids.
  17. Explain the different methods of population sampling.
  18. Explain about types and ecological importance of coral reef ecosystem.
  19. Describe about carbon and nitrogen cycles with suitable diagrams.
  20. Write an essay on environmental pollution and their biological effects.
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**F-5273**

**Sub. Code**

**7BMB6C1**

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &  
Supplementary/Improvement/Arrear Examinations**

**Sixth Semester**

**Marine Biology**

**FISHERY BIOLOGY AND BIostatISTICS**

**(CBCS – 2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Mackerel
2. Hagfish
3. Tiger shrimp
4. *Sardinella* sp.
5. Dorsal fin
6. Induced breeding
7. Catadromous
8. Fish tagging
9. ANOVA
10. Student t test.

**Part B**

(5 × 5 = 25)

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

11. (a) Explain the general characteristics of shark.

Or

- (b) Describe the major fishery of India.

12. (a) Narrate the prawn fishery resources of Tamil Nadu state.

Or

- (b) Brief the present status of Bombay duck fishery resources of India.

13. (a) Explain the digestive system of marine fish.

Or

- (b) Give an account on maturation and spawning behaviour of prawn.

14. (a) Discuss the method of survey of fish eggs and larvae.

Or

- (b) Elucidate the types of migrations in fishes.

15. (a) Write a note on correlation and regression analysis.

Or

- (b) What is ANCOVA? Explain its application in fisheries study.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Describe the classification of fishes with an example.
  17. Discuss on the commercial marine fishery resources of India.
  18. Elaborate the reproductive system of fish with neat diagram.
  19. Narrate the methods of fish tagging and marking.
  20. Explain the various steps involving in analysis of data using MS Excel.
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**F-5274**

**Sub. Code**

**7BMB6C2**

**B.Sc DEGREE EXAMINATION, APRIL 2021 &  
Supplementary/Improvement/Arrear Examinations**

**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. Species diversity
2. Assemblage diversity
3. Littoral vegetation
4. Species richness
5. Functional diversity
6. Habitat loss
7. Marine drugs
8. Antibiotics from marine animals
9. Marine toxins
10. Venomous animals

**Part B**

(5 × 5 = 25)

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

11. (a) Describe about genetic diversity.

Or

- (b) Write brief account on biodiversity conservation strategies.

12. (a) Explain the types and significance of seaweeds.

Or

- (b) What is species inventory? Explain

13. (a) Describe the threats of biodiversity.

Or

- (b) Write short notes on the impacts of climate change.

14. (a) Explain the importance of marine pharmacology.

Or

- (b) Define the functions of bioactive compounds.

15. (a) List out the types of marine toxins and its sources.

Or

- (b) Write short notes on pharmacological properties of marine toxins.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on global species diversity.

17. Explain the factors involving to assess the species diversity.

18. Describe uses and values of biodiversity.
  19. Give a detail account on bioactive compounds from marine invertebrates.
  20. Explain sources of toxin from the marine environment
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**F-5275**

**Sub. Code**

**7BMBE3A**

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &  
Supplementary/Improvement/Arrear Examinations**

**Sixth Semester**

**Marine Biology**

**Elective — ENTREPRENEURSHIP DEVELOPMENT**

**(CBCS – 2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

**(10 × 2 = 20)**

Answer **all** questions.

1. Social entrepreneurship
2. Types of enterprise
3. Working capital
4. TANSI
5. Venture Capital
6. Merchant banks
7. Subsidies
8. Tax concessions
9. Protein skimmer
10. CMFRI

**Part B**

(5 × 5 = 25)

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

11. (a) Explain the concept of entrepreneurship.

Or

- (b) Describe the types of entrepreneurship.

12. (a) Discuss about the financing institutions.

Or

- (b) Elucidate small scale industries.

13. (a) Explain briefly on the financial sources for businesses.

Or

- (b) Write short notes on the types of private placements.

14. (a) Give an account on role of state government in promoting entrepreneurship.

Or

- (b) Explain Export Oriented Units.

15. (a) Write about marketing strategies of algae.

Or

- (b) Give a brief account on the role of shrimp hatcheries.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the factors influencing the entrepreneurship.
  17. Write about role of institutions for the development of small scale business.
  18. Explain the merchant banks in India and their role in entrepreneurship development
  19. Discuss about opportunities, constraints and way forward in women entrepreneurship.
  20. Write an essay on setting and maintenance of marine aquarium
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