F–5094

Sub. Code
7BMB1C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Marine Biology

FUNDAMENTALS OF OCEANOGRAPHY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Benthic zone.
2. Challenger Expedition.
3. Explain tides.
4. Ocean current.
5. ppt.
6. Dissolved gases.
7. Dianoflagellates.
8. Secondary consumer.
9. Commensalism.
10. Benthic environment.

Part B (5 × 5 = 25)

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

11. (a) Give an account of history and development of Oceanography.

Or

(b) What is benthic environment? Explain the divisions.

12. (a) Write about the properties of waves.

Or

(b) What is Estuaries? Explain the types.

13. (a) Write the concept of chlorinity and salinity of seawater.

Or

(b) Describe about particulate organic matter.

14. (a) What are the roles of plankton in coastal biodiversity?

Or

(b) Give an account on classification of phytoplankton.

15. (a) Narrate the migration and random genetic drift.

Or

(b) What is parasitism? Give an example.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on geomorphology of Ocean.

17. Describe about the major divisions of marine environment with illustrations.

18. Write a detailed note on chemical properties of seawater.

19. Describe the method of estimation of primary productivity.

20. Write a detailed account on animals associations in the marine environment.

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F–5095

Sub. Code
7BMB1C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Marine Biology

INVERTEBRATE

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Radial symmetry.
2. Bivalvia.
3. Sponges.
4. Hermaphrodites.
5. Acorn worms.
6. Balanoglossus.
7. Notochord.
8. Nervecord.
9. Prochordata.
10. Tadpole larva.

Part B (5 × 5 = 25)

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

11. (a) How do you classify the invertebrate phyla?

Or

(b) Write about the salient features of invertebrate.

12. (a) What are the general features of Hemichordata?

Or

(b) Write an general account on water vascular system in Echinoderms.

13. (a) Write an account on morphology and affinities of Balanoglossus.

Or

(b) Write a brief note on respiratory system of shrimp.

14. (a) Write about the origin and evolution of Prochordata.

Or

(b) What are the principles and classification of Prochordata.

15. (a) Write about the classification of Urochordata with examples.

Or

(b) Explain the retrogressive metamorphosis in Herdmania.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write a detailed note on classification of major marine invertebrate phyla.

17. Describe the various classes of phylum Mollusca with examples.

18. Give a detailed description on classification and detailed study of Branchiostoma (Amphioxus).

19. Write an essay on early development and larval metamorphosis of Prochordata.

20. Give a detailed description of circulatory system of Ascidian.

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F–5266

Sub. Code
7BMB5C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Marine Biology

DEVELOPMENTAL BIOLOGY AND EVOLUTION

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Epididymis.
2. Polar body.
3. Polyspermy.
4. Parthenogenesis.
5. Autonomous specification.
6. *C. elegans.*
7. Mutation theory.
8. Darwinism.
9. Abiogenesis.
10. Organic monomers.

Part B (5 × 5 = 25)

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

11. (a) Explain the process of oogenesis with neat diagram.

Or

(b) Describe the acrosome reaction with suitable diagram.

12. (a) Elucidate the patterns of cleavage.

Or

(b) Give a brief note on polyspermy.

13. (a) Explain embryonic cells.

Or

(b) Write briefly on cell fate and cell linages.

14. (a) Explain Lamarckism.

Or

(b) Write briefly on gene frequency.

15. (a) Give an account on origin of biochemical molecules.

Or

(b) Write brief notes on origin of aerobic metabolism.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the molecular basis of fertilization.

17. Illustrate different types of placenta.

18. Explain developmental stages of *Drosophila*.

19. Give an account on theories of evolution.

20. Explain origin of eukaryotes cells.

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F–5267

Sub. Code
7BMBE1A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Marine Biology

Elective–MOLECULAR BIOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Griffith experiment.

2. Bidirectional replication

3. Polymerase enzyme.

4. Genetic code.

5. Translation.

6. Replisome.

7. Gene regulation.

8. Pili.

9. Promoters of DNA.

10. RNA polymerase.

Part B (5 × 5 = 25)

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

11. (a) Describe about the mechanism of Chase experiment on DNA replication.

Or

(b) Explain rolling circle replication of DNA.

12. (a) Differentiate DNA replication process of prokaryotes and eukaryotes.

Or

(b) Explain mismatch repair mechanism of DNA

13. (a) Illustrate the synthesis of mRNA in eukaryotes.

Or

(b) Describe briefly on process of translation.

14. (a) Explain about competence cell in gene transfer.

Or

(b) Give a note on self-transmissible plasmids.

15. (a) Write about gene concepts.

Or

(b) Give a detailed account on gene concept.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the methods for identification of genetic materials.

17. Explain about structure and function of plasmid DNA.

18. Write an essay on synthesis of rRNA in prokaryotes and eukaryotes.

19. Explain the transformation mechanism of gene.

20. Give an elaborate note on organization of gene in organisms.

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F–5270

Sub. Code
7BMBE2A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Marine Biology

Elective–MARINE MICROBIOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Intertidal zone
2. Estuary
3. Psychrophilic
4. Osmophilic
5. Mycorrhizae
6. Anabaena
7. Freezing
8. Astaxanthin
9. Rigor mortis
10. Salmonella

Part B (5 × 5 = 25)

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

11. (a) Discuss the microbial biodiversity in saltpan.

Or

(b) Give an account on estuarine microbes.

12. (a) Brief on adaptive mechanisms of alkalophilic bacteria.

Or

(b) Explain the adaptive mechanisms of hyperthermophiles.

13. (a) Marine sponge: An harbour of microbial diversity Explain

Or

(b) Describe the microbe-microbe interactions.

14. (a) Brief the symptoms and prevention methods of Cornybacter diseases.

Or

(b) Narrate the sources and symptoms of Aeromonas diseases.

15. (a) Describe the method of canning of sea food.

Or

(b) Elucidate the various applications of marine enzymes.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Describe the structure and functions of marine microbial community.

17. Explain the bioactive potential of extremophilic microbes

18. Discuss the plant-microbes interactions.

19. Write an essay on causes, symptoms and treatment of various viral diseases.

20. Elaborate the various applications of pigments and antibiotics

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F–6132

Sub. Code
7BMB3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

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. Chloroplast.

2. Microtubules.

3. Mitosis.

4. Receptors.

5. DNA replication.

6. Different forms of DNA.

7. Genetic engineering.

8. Chromosomal manipulation.

9. Types of cell.

10. Genetic code.

Part B (5 × 5 = 25)

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

11. (a) Explain about the structure and functions of mitochondria.

Or

(b) Briefly explain about eukaryotic cell structure.

12. (a) Give an account on single transduction.

Or

(b) Describe about cell signaling.

13. (a) Give a detailed account on tertiary structure of protein.

Or

(b) Briefly explain about DNA replication in eukaryotic.

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

Or

(b) Genetic engineering in marine organization.

15. (a) Explain - Properties of genetic code.

Or

(b) Describe the tRNA termination.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the structure and functions nucleus.

17. Describe - Cell division.

18. Briefly explain about DNA replication in prokaryotic.

19. Explain about structure and functions of double stranded DNA.

20. Give a detailed account on mechanisms of translation process.

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