F–8227

Sub. Code
7BMB3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

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; All questions carry equal marks.

1. Nucleolus
2. Phosopholycerides
3. Crossing Over
4. M-Phase
5. Polypeptide Chain
6. Nucleoside
7. RNA
8. Cistron
9. Methionine
10. Spindle Fiber

Part B (5 × 5 = 25)

Answer **all** questions; All questions carry equal marks.

11. (a) Describe the structure of prokaryotic cell.

Or

(b) Write a note on the structure and function of Cell membrane.

12. (a) Summarize the molecular mechanism of signal transduction.

Or

(b) Explain the stage of mitosis.

13. (a) Give an account on Ramachandran Plot.

Or

(b) Examine the secondary structure of protein.

14. (a) Write a short note on the structure of DNA.

Or

(b) Discuss the history of genetic studies.

15. (a) Comment on nucleosomes.

Or

(b) Summarize the meiosis-II.

Part C (3 × 10 = 30)

Answer any **three** questions; All questions carry equal marks..

16. Explain the structure and function: (a) Endoplasmic reticulum (b) Mitochondria.

17. Illustrate the stages of Cell Cycle with neat sketch.

18. Compare the replication in prokaryote and eukaryote.

19. Discuss the chromosomal manipulation and its significance.

20. Write an essay on genetic code and its importance in cell function.

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F–8228	Sub. Code
	7BMB4C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fourth Semester

Marine Biology

ENVIRONMENTAL BIOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

Write neatly and legibly. Draw diagrams wherever necessary.

1. Define ecology.
2. Define primary producer with example.
3. Write note on population.
4. Explain species.
5. Define Creek.
6. Define desert.
7. Define coral reefs with example.
8. What is green house gases and few examples.
9. Write note on MARPOL.
10. Expand IPCC.

Part B (5 × 5 = 25)

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

11. (a) Write note on different types of ecosystem.

Or

(b) Brief note on food chain.

12. (a) Write detail note on fish recruitment and morality.

Or

(b) What are the factors which influence species richness and diversity

13. (a) Write short note on Estuarine ecosystem and its importance.

Or

(b) Write are the different types of terrestrial habitat?

14. (a) Write short note on Nitrogen cycle.

Or

(b) Write note on microbes and its role in biogeochemical cycle.

15. (a) List out laws related to environmental protection.

Or

(b) Give an account on biosphere reserves in India.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. write an essay on ecological complexity and stability.

17. Write detail note on population dynamic theory.

18. Explain the types of marine habitat and it ecological importance.

19. Write an essay on ecological importance of biogeochemical style.

20. List out types of pollution and its impact on biological system.

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F–8229

Sub. Code
7BMB5C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

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; All the question carry equal marks.

1. Germ cells
2. Oogenesis
3. Polyspermy
4. Parthenogenesis
5. Specification
6. Cell fate
7. Natural selection
8. Gene frequency
9. Organic polymers
10. Anaerobic metabolism

Part B (5 × 5 = 25)

Answer **all** questions; All the question carry equal marks.

11. (a) Write shortly on basic concepts of embryonic development.

Or

(b) Explain the process of fertilization and its biochemical consequences.

12. (a) List out the types of eggs with suitable diagrams.

Or

(b) Describe the process of gastrulation.

13. (a) Distinguish between induction and competence of the embryonic cells.

Or

(b) Give an account on cytoplasmic determinants.

14. (a) Explain the theory of Lamarckism.

Or

(b) Write briefly on genetic basis of evolution.

15. (a) Describe the origin of eukaryotic cells.

Or

(b) Explain aerobic metabolism.

Part C (3 × 10 = 30)

Answer any **three** questions; All the question carry equal marks.

16. Explain the process of Spermatogenesis with a neat diagram.

17. Describe the types of placenta and placentation.

18. Explain the early development and axis specification in drosophila.

19. Give a detail account on the molecular evolution.

20. Write as essay on the origin of biological molecules.

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F–8232	Sub. Code
	7BMBE1C

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

Marine Biology

Elective: BIOINFORMATICS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions. All questions carry equal marks.

1. NCBI
2. BLAST
3. DECIPHER
4. FASTA
5. RasMol
6. DSSP
7. Genomics
8. Microarray
9. Molecular Mechanics
10. AMPHORA

Part B (5 × 5 = 25)

Answer **all** questions. All questions carry equal marks.

11. (a) Give an account on application of Bioinformatics.

Or

(b) How will you retrieve the Protein sequence - illustrate?

12. (a) Explain the Needleman-Wunsch algorithm uses in bioinformatics.

Or

(b) Write a note on Dot matrix method.

13. (a) Write a note on CASP

Or

(b) Comment on Swiss PDB viewer.

14. (a) Describe the methods followed in Structural genomics.

Or

(b) Describe the basic principles of drug designing.

15. (a) Discuss the screening methods of Virtual Screening.

Or

(b) Comment on the Computer-aided drug design.

Part C (3 × 10 = 30)

Answer any **three** questions. All questions carry equal marks.

16. Give a detailed note on biological database and its importance.

17. Explain the components and significance of the phylogenetic analysis?

18. How will you predict the structure of secondary structure of protein-Explain?

19. Describe the functional genomics role in health care.

20. Explain the approaches and mechanics in docking.

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F–8234	Sub. Code
	7BMBE2B

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Fifth Semester

Marine Biology

Elective: MARICULTURE

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. CMFRI
2. Cobia
3. Catwalk
4. Raceways
5. Backyard hatchery
6. Induced breeding
7. Milk fish
8. Grouper
9. RGCA
10. IMTA

Part B (5 × 5 = 25)

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

11. (a) Explain the recent developments in Indian mariculture.

Or

(b) Brief the importance of coastal aquaculture.

12. (a) Discuss the various criteria of site selection for land based aqua farm.

Or

(b) Describe the design and construction of open sea cages.

13. (a) Explain the various types and components of hatchery.

Or

(b) Elaborate the methods of disease management in shrimp pond.

14. (a) Narrate the culture practices of lobster.

Or

(b) Elucidate the method of culture of mullet.

15. (a) Brief the economic importance of seaweeds.

Or

(b) List the various companies involved in construction of open sea cages.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the potentialities and socio-economic problems of aquaculture.

17. Describe the design, construction, operation and maintenance of aqua farm.

18. Elaborate the methods of induced breeding and seed production of seabass.

19. Discuss the biology and culture practice of cobia, *Rachycentron canadum*.

20. Write an essay on various types of seaweed culture.

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