

<b>R- 4638</b>
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<b>Sub. Code</b>
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<b>461201</b>
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**M.Sc. DEGREE EXAMINATION, APRIL 2021**

**Second Semester**

**Oceanography and CAS**

**MARINE ECOLOGY AND ZOOGEOGRAPHY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Salinity.
2. Plankton.
3. Food-web.
4. Energy flow.
5. Carrying capacity.
6. Population growth.
7. Succession.
8. Foulers.
9. Over-exploitation.
10. Red list.

**Part B****(5 × 5 = 25)**

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

11. (a) Describe the adaptations of nekton.

Or

- (b) Explain the benthic environment.

12. (a) Write note on concept of marine ecosystem.

Or

- (b) Briefly explain the food chain in a marine ecosystem.

13. (a) Expound the prey-predator relationship in a population.

Or

- (b) Discuss about dispersal of a population.

14. (a) Write briefly the marine fouling and boring community.

Or

- (b) Mention about marine zoogeography with reference to Indian Ocean.

15. (a) Comment on the biodiversity.

Or

- (b) Write the importance of marine biodiversity.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an account of classification of marine environment.
  17. Explain the recycling of nutrients in the marine ecosystem.
  18. Describe population density dependent and independent factors.
  19. Expound with suitable examples of animal association in the sea.
  20. Briefly explain the marine biodiversity assessment techniques
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<b>R-4639</b>
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<b>Sub. Code</b>
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<b>461202</b>
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**M.Sc. DEGREE EXAMINATION, APRIL 2021**

**Second Semester**

**Oceanography and CAS**

**MARINE POLLUTION, ENVIRONMENT AND HEALTH**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define marine pollution.
2. What are the sources of nuclear pollutants?
3. Comment on micro plastic.
4. How red tide occur?
5. Note on DDT.
6. What is Bioaccumulation?
7. Define bioindicators.
8. Short note on Hg, Pb.
9. Define climate change.
10. Define trace metal.

**Part B** (5 × 5 = 25)

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

11. (a) Describe about consequences of organic discharge to estuary.  
Or  
(b) Write detail note on BOD.
12. (a) Describe about fertilizer pollution.  
Or  
(b) Note on current pollution status of Mediterranean sea.
13. (a) Note on factors affecting the bioaccumulation of pesticide.  
Or  
(b) Describe about impact of pesticides on the environment.
14. (a) Explain about heavy metal pollution sources and its effects.  
Or  
(b) How do we dispose radioactive wastes?
15. (a) How global warming affects marine ecosystem.  
Or  
(b) Comment on crustaceans and mollusks as indicator organisms.

**Part C** (3 × 10 = 30)

Answer any **three** questions.

16. Describe the mechanism of dispersion of different pollutants.
17. Discuss the sources and treatment process of sewage pollution.

18. Explain in detail about monitoring strategies of pollution.
  19. Write an essay on present status of coastal pollution in India and ecological impact.
  20. Write detail note on red tide phenomena, distribution, types of poisoning and method to minimize the red tide in the ocean.
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<b>R-4640</b>
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<b>Sub. Code</b>
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<b>461203</b>
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**M.Sc. DEGREE EXAMINATION, APRIL 2021**

**Second Semester**

**Oceanography and CAS**

**APPLICATIONS OF REMOTE SENSING AND GIS IN  
OCEANOGRAPHY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define active remote sensing?
2. Short note on electromagnetic spectrum?
3. Describe sensor and Platform?
4. What is OCM?
5. Define visual image interpretation?
6. What is land use and land cover?
7. Explain geostationary satellite?
8. Define Orb View.
9. Define Vector data?
10. Note on GIS.

**Part B** $(5 \times 5 = 25)$ 

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

11. (a) Write a note on electromagnetic energy interaction with atmosphere.  
Or  
(b) Write a note on electromagnetic energy interaction with earth surface.
12. (a) Explain in detail about sensor used in ocean studies.  
Or  
(b) Write a note on aerial photography missions.
13. (a) Explain mapping application in wetland mapping.  
Or  
(b) Write a note on principles of land form identification.
14. (a) Write a note on DMSP and GOES and its applications.  
Or  
(b) What is the Global Positioning System?
15. (a) Describe about about the vector data with example?  
Or  
(b) How do we use GIS in geology.

**Part C** $(3 \times 10 = 30)$ 

Answer any **three** questions.

16. Write an essay on principles and concepts of Remote sensing.
17. Write a detail note on satellite sensor and platform.

18. Explain in detail about mapping application and its uses in water resource and urban planning.
  19. Write an essay on types of satellite.
  20. Write detail note on image classification.
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**R5455**

**Sub. Code**

**461501**

**M.Sc. (Oceanography & CAS) DEGREE EXAMINATION,  
APRIL –2021**

**Second Semester**

**MARINE BIODIVERSITY AND CONSERVATION**

**(CBCS – 2019 Onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Ecosystem diversity.
2. Extinct species.
3. Endangered
4. Ex-situ
5. Marine reserve
6. MPA
7. Biological diversity
8. Regional Seas Programme
9. IUCN
10. Wild Life Protection Act

**Part B**

(5 × 5 = 25)

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

11. (a) Explain the threats to marine biodiversity.

Or

- (b) Write briefly on endemism and rarity.

12. (a) Discuss on ecosystem restoration.

Or

- (b) Write note on genetic bank.

13. (a) Write note on Integrated Coastal Management.

Or

- (b) Discuss about MPA in India.

14. (a) Explain briefly about cultural biodiversity.

Or

- (b) Mention the jurisdictional gaps and overlaps on marine biodiversity conservation.

15. (a) Explain briefly on *ex-situ* and *in-situ* conservation.

Or

- (b) Explain the concept of sustainable development.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an account of extinction of marine resources. Note their rate, causes and vulnerability.
  17. Mention the conservation strategies of species and how they are protected by law.
  18. Give a detailed account on ecological restoration process.
  19. Expound the impediments to marine biodiversity conservation.
  20. Describe the importance of traditional knowledge in sustainable development.
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**R5456**

**Sub. Code**

**461401**

**M.Sc. DEGREE EXAMINATION, APRIL – 2021**

**Fourth Semester**

**Oceanography and CAS**

**RESEARCH METHODOLOGY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Define dinoflagellates?
2. Write notes on primary productivity in animals?
3. Define Microscope?
4. What is Histochemistry?
5. Short note on spectroscopy and its types
6. Define DNA finger printing?
7. Define standard deviation and error?
8. What is FASTA and BLAST?
9. Write notes on library research?
10. Short note on manuscript preparation?

**Part B**

(5 × 5 = 25)

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

11. (a) Describe the methods for estimation reproduction in animals.

Or

- (b) Write note on culture methods of diatoms and dinoflagellates.

12. (a) Describe about principles and applications of light microscope.

Or

- (b) Explain about histochemistry and its methods.

13. (a) Write principles and applications of chromatography.

Or

- (b) Write a note on Electrophoresis with principle and application.

14. (a) Give detail account on Correlation and regression.

Or

- (b) Classify the types of search engines and function in bioinformatics.

15. (a) What is data analysis and computer aided techniques?

Or

- (b) Describe about art of writing and presentation of results.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on culture systems of fin fishes and seaweeds?
  17. Write an essay on Scanning and Electron Microscope?
  18. Explain about centrifuge and its principle and applications?
  19. Describe in details about biological data bases?
  20. Give an account on manuscript preparation with computer aided techniques?
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