R–3057

Sub. Code
461201

M.Sc. DEGREE EXAMINATION, APRIL 2019.

Second Semester

Oceanography and CAS

BIOLOGICAL OCEANOGRAPHY

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Primary Production.
2. Biomass.
3. Zooplankton.
4. Bio-indicators.
5. Alginates.
6. Sand dunes.
7. Gonado somatic index.
8. Branchipoda.
9. Chaetognatha.
10. Endoceism.

Part B (5 × 5 = 25)

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

All questions carry equal marks.

11. (a) What are Harmful algal blooms and its impact on the marine environment?

Or

(b) Briefly explain the taxonomic classification of phytoplankton.

12. (a) Define Secondary productivity and how it is estimated.

Or

(b) Briefly explain the regional difference in secondary production with special reference to east and west coasts of India.

13. (a) Write notes on the seagrass and its ecological significance.

Or

(b) How sand dunes help in the protection of beach morphology?

14. (a) Give an account on the various types of appendages in shrimp.

Or

(b) Write an essay on the Taxonomic classification of phylum Echinodermata.

15. (a) Give an account on the phoronida.

Or

(b) Write short notes on the different types of symbolic relationships.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the following with suitable examples :
    (a) Meroplankton.
    (b) Plankton diurnal migration.
    (c) Seasonal changes in plankton.
    (d) Phytopigments.

17. Give an account of the relationship between plankton and fisheries.

18. Write short notes on the following with suitable examples :
    (a) Seagrass
    (b) Mangroves.
    (c) Rhodophyceae
    (d) Phaeophyceae.

19. Write an essay on the various methods of reproduction in marine invertebrates.

20. Describe elaborately on the various animal association in the marine environment.

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R–3058

Sub. Code
461202

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Oceanography and CAS

ENVIRONMENTAL IMPACT ASSESSMENT

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. EIA.
2. CRZ.
3. Site selection.
4. Sample size.
5. LOI methods.
6. BOD.
7. Benthos.
8. Abundance.
9. AMBI.
10. BQI.

Part B (5 × 5 = 25)

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

All questions carry equal marks.

11. (a) Write short notes on:

(i) Environmental Impact Assessment (EIA).

(ii) Rapid EIA.

Or

(b) Briefly explain the secondary data.

12. (a) Write an account on the spatial and temporal variation of fauna.

Or

(b) Discuss the methods of data collection as field observation.

13. (a) Briefly explain the sediment quality in Marine Environment.

Or

(b) Write short notes on:

(i) Hydrodynamics

(ii) Fecal coliforms.

14. (a) How will you classify marine benthos?

Or

(b) Describe the significance of preservation, staining and sorting of marine benthos.

15. (a) Discuss the importance and application of marine biotic indices in EIA study

Or

(b) Write notes on the pollution indicator organism concept.

Part C (3 × 10 = 30)

Answer any **three** questions.

All questions carry equal marks.

16. Write an essay on the Coastal Regulation Zone Notification in 1991.

17. Explain in detail the following:

    (a) Benthic Quality Index (BQI)

    (b) Ecological Quality (EcoQ) and

    (c) Taxonomy Sufficiency (TS).

18. Describe elaborately on the various physico — chemical and biological entities involved in Marine Environment Impact Assessment

19. Write an account on the guidelines followed for EIA studies in India?

20. Describe the various statistical software used for marine environmental health assessment

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R–3059

Sub. Code
461203

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Oceanography and CAS

APPLICATION OF REMOTE SENSING AND GIS IN OCEANOGRAPHY

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Remote sensing.
2. Absorption.
3. Types of sensors.
4. Multispectral scanners.
5. Microwave.
6. Thermal remote sensing.
7. SEASAT.
8. NOAA.
9. GIS.
10. DEM.

Part B (5 × 5 = 25)

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

All questions carry equal marks.

11. (a) Write briefly on the working principles of remote sensing.

Or

(b) Write notes on the electromagnetic spectrum and its interaction with the atmosphere.

12. (a) Briefly explain the types of Active sensors and Passive sensors.

Or

(b) Briefly explain the principles of photogrammetry.

13. (a) Describe the application of remote sensing in agricultural, water resource and urban planning.

Or

(b) How soil and wetlands are mapped using remote sensing?

14. (a) Write short notes on

(i) MODIS

(ii) GOES.

Or

(b) What is GPS and why it is used for marine surveys?

15. (a) Write notes on the principles of image classification.

Or

(b) Application of GIS in natural resource management.

Part C (3 × 10 = 30)

Answer any **three** questions.

All questions carry equal marks.

16. How electromagnetic energy interacts with soil and water? Explain.

17. Write an essay on the types and uses of sensors and platforms.

18. How landforms are identified and evaluated using multispectral, thermal and microwave remote sensing.

19. Describe in detail Spatial Data Transfer Standards used in GIS.

20. Explain the process and problems in image classification.

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R–3060

Sub. Code
461502

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Oceanography and CAS

MARINE BIODIVERSITY AND CONSERVATION

(CBCS – 2016 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Species diversity
2. Extinct species
3. Endangered
4. WWF
5. Marine reserve
6. Marine park
7. Regional seas programme
8. UNEP
9. Sustainable development
10. NBA

Part B (5 × 5 = 25)

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

All questions carry equal marks.

11. (a) Why is marine biodiversity important?

Or

(b) Point out the causes of extinction.

12. (a) Explain the loss of genetic viability.

Or

(b) Explain about IUCN.

13. (a) What are the principles for designing MPA?

Or

(b) Mention the various benefits of MPA.

14. (a) Briefly explain on marine biodiversity conservation.

Or

(b) What are the jurisdictional gaps and overlaps on marine biodiversity conservation?

15. (a) Write note on traditional society.

Or

(b) Explain the concept of sustainable development.

Part C (3 × 10 = 30)

Answer any **three** questions.

All questions carry equal marks.

16. Elaborate the various threats to marine biodiversity.

17. What are all the conservation strategies of species and how they are protected by law?

18. Write an account of the principles and guideline for ecological restoration.

19. Give a detailed account on cultural and biological diversity.

20. Explain the international approaches to sustainable development.

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