

**R8435**

**Sub. Code**

**548201**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Second Semester**

**Integrated Marine Biology**

**CHEMICAL OCEANOGRAPHY**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Define Salinity.
2. Write short note on unique characteristics of seawater.
3. Define COD.
4. Write short note on green house gasses?
5. Write short note on marine H<sub>2</sub>S.
6. Write short not on Major elements.
7. What is anoxic basin?
8. Define organic carbon.
9. What is de-nitrification?
10. Define Productivity.

**Part B**

(5 × 5 = 25)

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

11. (a) Write a detail note on structure of seawater.

Or

- (b) Write a detail note ionic composition of seawater.

12. (a) Discuss about dissolved gases in seawater and its significance.

Or

- (b) What factors influence dissolved oxygen level in seawater?

13. (a) Write a detail note on cycling of trace elements in coastal water.

Or

- (b) Give an account on anoxic basin.

14. (a) Write a detail note on distribution of particulate in marine environment.

Or

- (b) Write about radiation balance of earth atmosphere.

15. (a) Discuss about ecological importance nitrogen.

Or

- (b) Discuss about silicon sources and its cycle in marine environment.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on chemical property of seawater.
  17. Write an essay on Carbon dioxide origin. Importance and distribution in the ocean.
  18. Discuss about dissolved particulate sources classification. Composition and estimation.
  19. Write an essay on organic matter and productivity of the ocean.
  20. Write an essay on Nitrogen, Phosphorus cycle in marine environment.
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**R8436**

**Sub. Code**

**2MB2A1**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Second Semester**

**Integrated Marine Biology**

**Allied II – GENERAL CHEMISTRY - II**

**(CBCS – 2022 onwards)**

Time : Three Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions

1. Name the compound of lead that is used in match industry.
2. What is the oldest explosive material used for firework?
3. What do you mean by water of crystallization?
4. What is dry ice?
5. Define fertility index.
6. What is bone meal used for?
7. What was the chemical that was the first to be used as pesticide? Give the structure.
8. Write down the structure of pyrethrum.
9. Which sugar gives negative benedict's test?
10. What are the methods of haemoglobin estimation?

**Part B**

(5 × 5 = 25)

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

11. (a) Comment on the added cationic salts that give fireworks the colour.

Or

- (b) Explain the manufacturing process of matches.

12. (a) Classify the types of desiccants. What are the advantages of vacuum drying?

Or

- (b) Describe the principle and applications of fractional and steam distillations.

13. (a) Explain the functions of potassium and phosphorous on plant growth.

Or

- (b) Illustrate the methodologies to analyse micro – and macro – nutrients of soil.

14. (a) Discuss the harmful effects of fungicides to the environment and human health.

Or

- (b) What are insecticides? Classify based on their chemical composition. Comment on the disadvantages of insecticides.

15. (a) Explain Nelson – Somyogi method of detection of reducing sugars.

Or

- (b) How are blood groups classified? Discuss about the methods to determine the groups.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. (a) Explain the methods for preventing corrosion. (5)
  - (b) Discuss the bleaching and colouring techniques of paper. (5)
  17. Elaborate the principle, working and applications of various methods of chromatography.
  18. (a) Explain the significances of biofertilizers. (5)
  - (b) What is Haber process? (5)
  19. Write a note on organic and inorganic pesticides.
  20. Explain the methods for the preparation of methyl orange, phenolphthalein, indigo and alizarin dyes.
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