

Roll No. : 5230300260004

CHES4622A

M.Sc., Semester Fourth

Examination, 2024-25

CHEMISTRY

Paper - Second (A)

[Environmental Chemistry]

[Time : 3 Hours]

[Maximum Marks : 75]

Note : The Question paper contain two sections. Section A contains 08 short answer type questions. Attempt any 05 questions from this section. Each question carries 06 marks. Section B contains 05 long answer type questions. Attempt any 03 question from this section. Each question carries 15 marks.

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[P.T.O.]



SECTION - A
(Short Answer Type Questions)

Note: Attempt any 05 questions from the following 08 questions. Each question carries 06 marks.

(5×6=30)

1. Define the term biodiversity and explain its importance.
2. Differentiate between pollutant and contaminant.
3. Define the term "aerosol" and explain how aerosols can affect the atmospheric radiation balance and visibility.
4. How does soil pH affect the availability of cations like calcium, magnesium, and potassium?
5. What are the main sources of inorganic nutrients in soil?
6. Explain the concept of "nitrification" and "denitrification" in the nitrogen cycle.
7. Explain the concept of enzyme inhibition.
8. Explain the difference between BOD and COD.

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SECTION - B
(Long Answer Type Questions)

Note: Attempt any 03 questions from the following 05 questions. Each question carries equal marks.

(3×15=45)

9. Explain oxygen cycle in detail.
10. Discuss the role of total organic carbon and sulfur in water quality assessment. Also discuss their methods of determination.
11. Write note on the following:
 - (a) Organic components in soil
 - (b) Ion exchange reactions in soil
12. Discuss the role of micro-organism in aquatic chemical reactions. Explain in detail about the microbial assisted redox reactions.
13. What are the sources of lead and mercury in the environment? Discuss in detail the potential risks associated with the elevated levels of these metals.

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