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MCH-023

M. SC. IN CHEMISTRY/

M. SC. IN ANALYTICAL CHEMISTRY

(MSCCHEM/MSCANCHEM)

Term-End Examination

December, 2025

MCH-023 : ENVIRONMENTAL CHEMISTRY

Time : 2 Hours

Maximum Marks : 50

Note : Answer any *five* questions. All questions carry equal marks.

1. (a) Differentiate between any *two* of the following pairs : 5

(i) Pedology and Edaphology

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(ii) Soil pedon and Soil profile

(iii) Value and Chroma of a soil colour

(b) What are soil separates ? List the criteria for field determination of soil texture. 5

2. (a) Define the essential plant nutrients. List the conditions for a plant nutrient to be classified as essential. 5

(b) Explain the reasons and the consequences of overuse of water. 5

3. (a) List the physical characteristics of water used to specify the quality of a particular type and explain any *one* of them. 5

- (b) Explain what is meant by objectives, criteria and standards in the context of water quality for various purposes. Name any *one* agency that is meant to set the drinking water standards. 5
4. (a) Name the regions of atmosphere on the basis of chemical composition and describe the nature of any *one* region giving its chemical constituents. 5
- (b) Briefly describe the phases of air pollution ecosystem. 5
5. (a) Name the *five* common forms of air pollutants and write a sentence for each of these forms. 5

- (b) Explain indoor and outdoor air quality giving the factors that constitute these two types. 5
6. (a) Name any *five* pollution parameters. Briefly describe the inplant measures adopted for pollution control. 5
- (b) Write any *five* characteristics of an ideal pesticide. 5
7. (a) Write the important parameters that are required to be known for proper treatment of sewage. 5
- (b) Name the principal biological agents transmitted through ingestion. Give any *two* diseases each caused by each of these. 5

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8. Write short notes on any *two* of the following : 5×2=10

- (a) Sewage disposal
- (b) Ambient air sampling
- (c) Biomonitoring
- (d) Microplastics and soil

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