M.Sc. (ENVIRONMENTAL SCIENCE)

(MSCENV)

Term-End Examination

June, 2022

MEV-013 : ENVIRONMENTAL CHEMISTRY

Time : 3 hours *Maximum Marks : 100*

Note : *Answer any **ten** questions.*

All questions carry equal marks.

Each question carries 10 marks.

1. Describe the soil horizons and explain their importance in determining the soil properties.

2. Explain scintillation process and working mechanism of scintillation counter.

3. Explain reasons for the following :

(a) Metal speciation is important in aqueous system

(b) Graphite acts as a lubricant

4. Differentiate between Determinate and Indeterminate errors with suitable examples.

5. Explain the toxic effects of the following heavy metals on enzymes :

(a) Cadmium

(b) Arsenic

6. What is the role of carbonate system in oceans ? Explain.

7. Explain the following with suitable examples :

(a) Chemical and dynamic equilibrium

(b) Aromatic hydrocarbons as environmental pollutants

8. Explain the mechanism of adsorption.

9. What are environmentally benign pesticides ? Explain with examples.

10. Define the following :

(a) Stratosphere

(b) Eutrophication

(c) Global Warming

(d) Tyndall Effect

11. Describe basic instrumentation for UV-Vis Spectrometry. What are its environmental applications ?

12. What is the working principle of Gas-Liquid Chromatography ? Describe its applications.

13. Write short notes on any ***two*** of the following :

(a) Hydrological Cycle

(b) Supercritical Fluids

(c) Soil Micronutrients

14. Give detailed description of Oxidation and Reduction reactions with suitable examples.