No. of Printed Pages : 3

MEV-013

M. SC. (ENVIRONMENTAL SCIENCE)

(MSCENV)

Term-End Examination

December, 2022

MEV-013 : ENVIRONMENTAL CHEMISTRY

Time : 3 Hours *Maximum Marks : 100*

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

1. What are the principles of Green Chemistry ? Explain in detail. 10

2. Describe the mechanism of ozone formation in the lower troposphere. 10

3. Explain the reasons for the following : 5+5

   (a) Aluminium sulphate is used as a coagulant

   (b) Ozone hole not seen in non-polar regions

4. Differentiate between the primary and secondary particulate matter with examples. 10

5. Explain the toxic effects of the following on humans : 5+5

   (a) Cyanide

   (b) Ozone

6. Explain the carbonate system in oceans. 10

7. Write short notes on the following : 5+5

   (a) Radionuclides

   (b) Tetra Ethyl Lead (TEL)

8. Explain the mechanism of adsorption. 10

9. What are UV-A, UV-B and UV-C radiation ? Explain the significance of UV-B radiation. 10

10. Define the following : $2\frac{1}{2} \times 4 = 10$

    (a) Polarography

    (b) Chemical potential

    (c) Silo-filler disease

    (d) Pedogenesis

11. Explain basic instrumentation of Mass spectrometry. What are its environmental applications ? 10

12. What is the working principle of High-Performance Liquid Chromatography ? Describe its applications. 10

13. Write short notes on any *two* of the following : 5+5

    (a) Acid mine drainage

    (b) K-type and F-type wastes

    (c) Photochemical Smog

14. Explain the relation between atmospheric stability and vertical mixing. 10