

M. Sc. (Semester-III) Examination

OCT - NOV - 2017

Paper-X Environmental Chemistry Code: 3498

(CHEMISTRY)

Marks: 70

Time: 2.5 hours

- Q-1** (i) Explain the biogeochemical distribution of phosphorous in detail. 14  
(ii) Explain the composition of air in detail and define the term "Environmental Chemistry"
- OR**
- Q-1** (i) What is global warming potential? Explain with suitable example. 14  
(ii) Write a short note on carbon footprint.
- Q-2** (i) Describe various photochemical reactions atmosphere. 14  
(ii) Explain the role of Particulates and NO<sub>x</sub> as air pollutants.
- OR**
- Q-2** (i) Explain acid rain mechanism and CO<sub>2</sub> as an air pollutant. 14  
(ii) Explain the term "Particulate Matter" Give an account of PM<sub>10</sub> particles.
- Q-3** (i) Draw schematic of hydrologic cycle and explain in brief. 14  
(ii) Explain in brief about evaporation and transpiration  
(iii) Explain the effect of excess of nitrate nitrogen and chlorine on aquatic life.
- OR**
- Q-3** (i) Explain the term "water pollution". Give definitions of following water quality 14  
parameters. (1) COD (2) Hardness  
(ii) How will you determine the Sulfate in the water sample?  
(iii) What is DO? Explain DO and BOD phenomena in detail.
- Q-4** Attempt any three of the following 14  
(i) What is the Soil Texture? Explain various classes of soil particles.  
(ii) Give analytical method for the determination of nitrite in a soil sample.  
(iii) Explain various types of soil sampling methods.  
(iv) Give an account of Liming in soil analysis.  
(v) What is cation exchange capacity of soil explain in brief?
- Q-5** Attempt any three of the following 14  
(i) Describe the method for the determination of -OH phenolic functional group by brominating method.  
(ii) Explain the Dumas' method for the determination of nitrogen in an organic compound  
(iii) How will you estimate polyhydric alcohol functional group in any organic compound?  
(iv) Explain the terms: (i) Lithosphere (ii) Pedosphere (ii) Biosphere  
(v) What is Alkoxy group? Give any one analytical method for the determination of alkoxy group.  
(vi) Explain in brief about Soil classification.