

NRT/KS/19/2095

Bachelor of Science (B.Sc.) Semester–III Examination
ENVIRONMENTAL SCIENCE (Environmental Chemistry and Instrumentations)
Optional Paper–I

Time : Three Hours]

[Maximum Marks : 50

N.B. :- (1) All questions are compulsory and carry equal marks.

(2) Illustrate your answer with suitable examples and diagrams.

1. Write structure of water. Describe physical properties of water with respect to latent heat, thermal conductivity, viscosity and surface tension. 10

OR

(a) Discuss different types of water demand. 5

(b) Describe the characteristics of ocean water. 5

2. What are Green House gases ? Describe Green House effect in detail. 10

OR

(a) Discuss the role of chemical species in the atmosphere. 5

(b) How does ozone layer protect us ? State the consequences of stratospheric ozone depletion. 5

3. Discuss the theory and applications of turbidimetry and nephelometry. 10

OR

(a) Describe how Hydrogen electrode can be used to measure pH of a solution. Write its advantages and disadvantages. 5

(b) Describe any one method of measurement. 5

4. What is gas chromatography ? Discuss the principle and application of gas chromatography. 10

OR

(a) State Beer and Lambert's law. 5

(b) Describe the principle of flame photometry. Discuss application of it. 5

5. Solve any **TEN** :

(a) Write types of surface water.

(b) Define 'buoyancy' of water.

(c) What are 'Estuaries' ?

(d) What is Dobson Unit ?

(e) Define Global Warming.

(f) What are the alternatives of CFC's ?

(g) What is the difference between Turbidometer and Nephelometer ?

(h) Write disadvantages of quinhydrone electrode.

(i) Define Molar conductance.

(j) What is R_f value ?

(k) Draw diagram of a colorimeter.

(l) Write components of flame photometer. 1×10