impacts on both structures and the environment. Support your discussion with illustrative examples to highlight the impacts of acid rain. (3+4)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1624 **G**

Unique Paper Code : 2182011103

Name of the Paper : Environmental Chemistry

Name of the Course : **B.Sc. (Hons.) Environmental Sciences**

Semester : I

Duration : 2 Hours Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer any **four** questions.
3. **All** questions carry equal marks.

1. Write short notes on the following : (5×3=15)

   (i) Molarity and Normality

(ii) Synthesis of Pesticides

(iii) Cation exchange reaction in soil

2. Explain the following : (5×3=15)

(i) Ozone layer depletion

(ii) Solubility of metals in water

(iii) Role of phenolic compounds in soil

3. Differentiate between the following: (5×3=15)

(i) Electrolytic cell and Galvanic cell

(ii) Ions and Radicals

(iii) Humic acid and Fulvic acid

(iv) Chelation and Complexation

4. Explain the significance of organic compounds in soil and clarify how soil chemical properties are altered

through Ion Exchange reactions due to the presence of soil organic carbon. (7+8)

5. (a) Explain the chemical properties of water. (5)

(b) How can we determine alkalinity in water? (5)

(c) With the help of a case study, discuss the environmental impacts of heavy metals in water. (5)

6. (a) During the onset of winter each year, Delhi experiences the pervasive presence of smog in its air. Clarify the specific type of smog that develops in the capital and elaborate on the primary and secondary pollutants accountable for air pollution in the region. (4+4)

(b) Analyze the chemical processes involved in the formation of acid rain and elucidate its adverse