



**RE-5369**

**M. Sc. (Part - II) Examination**

**April / May – 2010**

**Environmental Chemistry (Self Finance) : Paper - II**  
*(Water & Air : Pollution & Analysis)*

Time : 3 Hours]

[Total Marks : 70

**Instructions :**

(1)

नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवही पर अवश्य कपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="M. Sc. - 2"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="ENVIRONMENTAL CHEMISTRY (SELF FINANCE) - 2"/>	<input type="text"/>
Subject Code No. : <input type="text" value="5"/> <input type="text" value="3"/> <input type="text" value="6"/> <input type="text" value="9"/>	<input type="text"/>
Section No. (1, 2,.....) : <input type="text" value="1&amp;2"/>	<input type="text"/>
	Student's Signature

(2) Attempt all the six questions.

(3) Figures to the right indicate full marks.

**SECTION - I**

- 1 (a) Describe the effect of excess acidity, alkalinity and salinity in water. 4  
(b) Give an account of eutrophication. 4  
(c) Write a note on elemental pollutants. 4

**OR**

- 1 (a) Write the sources and harmful effect of heavy metal ions in water. Give their harmful effects. 4  
(b) Give an account in radionuclides in aquatic environment. 4  
(c) Write a note on flocculation of colloids by polyelectrolytes. 4

- 2 (a) Describe sewage treatment with a layout of sewage treatment plant. 6  
(b) Give an account on water disinfection. 5

**OR**

- 2 (a) Write a detailed account of removal of dissolved organic and inorganic matter from polluted water. 6

- (b) Name coagulants used in municipal water treatment and explain how they work. 5
- 3 (a) Give an account of demineralization and fluoridation of water. 6
- (b) Briefly summarize instrumental methods for analysis of waste water. 6

**OR**

- 3 (a) Write a note on automated water analysis. 6
- (b) Give an account on principles of coagulation and softening of water. 6

### SECTION - II

- 4 (a) Write an account on production and control of carbon monoxide. Mention its atmospheric fate. 6
- (b) Describe source and effect of various inorganic compounds as air pollutants. 6

**OR**

- 4 (a) Discuss the chemistry of formation of acid rain and give its harmful effects. 6
- (b) Write an account on nitrogen oxides in the atmosphere. 6
- 5 (a) Write a note on hydrocarbons as air pollutants. 4
- (b) Write short note on Bhopal gas tragedy explaining the chemistry involved. 4
- (c) Describe chlorofluorocarbons (CFC's) as pollutants. 4

**OR**

- 5 (a) Name few tragedies resulting from industrial pollution. Describe one of these in detail. 4
- (b) Describe organohalide compounds as organic air pollutants. 4
- (c) What are Freons? What are their uses and disadvantages? 4
- 6 (a) Define adsorption? Explain factors affecting adsorption process during control of gaseous air pollutants. 6
- (b) Explain in detail method for analysis of NO<sub>x</sub> in air sample. 5

**OR**

- 6 (a) Give a detailed account of air pollution control methods. 6
- (b) Write a note on scrubbers. 5