ET.2.04.1

# M. Sc. DEGREE II SEMESTER EXAMINATION IN ENVIRONMENTAL TECHNOLOGY
## MAY 2004

### ENV 2201 CHEMICAL METHODS IN ENVIRONMENTAL ANALYSIS

Time : 3 Hours Maximum Marks: 50

**PART - A**

(Answer *ANY FIVE* questions)
(All questions carry *EQUAL* marks)

(5 x 2 = 10)

I. 1. What is glass electrode?

2. Distinguish colorimeter and spectrophotometer.

3. What is the principle of AAS?

4. What are the properties of $\gamma$ -ray?

5. How do you collect SPM for analysis?

6. The dissolved oxygen in polluted water is less than 8.0 mg/L. Why?

**PART - B**

(Answer *ANY FIVE* questions)
(All questions carry *EQUAL* marks)

(5 x 3 = 15)

II. (a) Write a note on potentiometric titrations.

(b) How do you estimate nitrite colorimetrically in a water sample?

(c) Explain how sodium in a water sample is estimated using flame photometry.

*(Turn Over)*

(d) How radiation is measured using scintillation counter?

(e) What is the principle of COD estimation?

(f) Explain the principle of $NO_x$ determination.

## PART - C

(Answer *ANY FIVE* questions)
(All questions carry *EQUAL* marks)

(5 x 5 = 25)

III. How will you estimate fluoride in a water sample using Ion Selective Electrode?

IV. Describe the procedure for the sulphate estimation by turbidimetry.

V. What is the principle and methodology of estimation of a metal using AAS? What are the limitations of AAS?

VI. How many years will be required for $^{14}C$ isotope to decay to 1/3 of its original level? Half life period of $^{14}C$ is 5,570 years.

VII. Describe how $H_2S$ in polluted air is sampled and estimated.

VIII. Give the detailed procedure for the estimation of BOD in a water sample.

***