

N-55041

Seat No. _____

M. Sc. (Part-I) Examination

April / May – 2003

Environmental Sciences : Paper – III
(Environmental Chemistry & Monitoring)

Time : 3 Hours]

[Total Marks : 75

- 1 (a) Explain “Buffer Capacity.”
(b) What is the pH range of a buffer solution ? Mention buffers used for various pH ranges.
(c) Discuss the action of physiological buffers.

OR

- 1 (a) What are “colloids” ? Explain their important properties.
(b) Define order of reaction and explain first order kinetics.
(c) Describe the Langmuir adsorption isotherm.
- 2 (a) What are the permissible limits of important anions responsible for water pollution ?
(b) Explain the principle and procedure involved in the determination of fluoride and phosphate.
(c) What are the sources of lead pollution ? How lead can be detected and estimated ?

OR

- 2 (a) Discuss the effect of water pollution on aquatic life.
(b) Explain Biomagnification and its importance.
(c) Describe the methods for the determination of acidity of coloured samples.
- 3 Explain the techniques for :
(a) SO₂ monitoring
(b) NO–NO_x monitoring.

OR

- 3 (a) Give an account of inorganic particulate matter, show the differences from organic particulate matter.
- (b) Explain air quality standards.
- 4 (a) Write down the important properties of soil organic matter.
- (b) Discuss the adverse effect of soil erosion and describe how it can be minimised.

OR

- 4 (a) Explain sampling of solid wastes.
- (b) What are the important decontamination techniques.
- 5 Write notes on any **three** :
- (a) Bioaccumulation
- (b) Oxidation – reduction processes
- (c) Biodegradation
- (d) COD
- (e) Global climatic effect
- (f) Earthquaks.
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