

VPM's Advanced Study Centre

C/o. B. N. Bandodkar College of Science, Thane.

Post Graduate Diploma in Applied Analytical Chemistry

Re - Examination 2008-2009

Paper – III (100 Marks)

27.06.2009

5.00 – 8.00 p.m.

SECTION – I

Note: 1) Answers to the two sections are to be written in separate answer sheet.

- Q.1) Answer **Any Two** Briefly 10
- a) Describe primary, secondary and tertiary procedures of sewage \ effluent treatment.
 - b) Discuss the sources of Soil Pollution in detail.
 - c) Write laboratory method for determination of Hardness and Dissolved Oxygen.
 - d) Describe Particulates and Hydrocarbons as pollutants.
- Q.2) Write Notes on **Any Two** from the following. 10
- a) Composition of Soil. b) Acid Rain.
 - c) Heavy metals, Chlorides, Sulphates, Nitrates.
 - d) Physical water quality parameters.
- Q.3) Answer **Any Three** of the Following 10
- a) What is soil? Give importance of soil. How soil is formed?
 - b) What is Photochemical smog? Give the reactions involved in photochemical smog.
 - c) What is Green House Effect? Give its impact on global climate.
 - d) Discuss significance of water quality parameters:
(i) Ammonia (ii) Iron (iii) Total solids (iv) Acidity (v) Alkalinity
- Q.4) Write Short Answers for the following (**Any 5**) 10
- a) Define water pollution -
 - b) What are Air Pollutants? Name them.
 - c) Name major regions of the atmosphere.
 - d) Define B.O.D, C.O.D.
 - e) Define soil Pollution.
 - f) Name the processes involved in soil formation.
 - g) Give the sources of water pollution.
- Q.5) Answer **Any One** from the following 10
- a) Write laboratory method of B.O.D. and C.O.D. in detail.
 - b) Describe Oxides of Nitrogen (NOX) as pollutants.

SECTION II

- Q.1) a) What is emergency? 10
b) How the emergency management is formed and explain their role and responsibilities.
c) List the type of hazards and emergencies in any chemical plant.
- Q.2) Write short notes on any 3: 10
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| a) Manual / mechanical material handling | b) Electrostatic hazards |
| c) Energies used in industries | d) Chemical compatibility |
| e) Standard operating procedure | f) Prevention and protection |
- Q.3) a) Explain how the physical and physiological factors influence safety performance? 05
b) What are legislative & statutory requirements pertaining to safety. List two each. 05
- Q.4) Explain with examples engineering techniques used for accident prevention considering the hazard management. 10
- Q.5) Explain any 2: 10
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| a) Risk analysis | b) Chemical Safety |
| c) Material handling | d) Transportation of hazardous chemicals |
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