

M.Sc.- I (Chemistry) (NEP Pattern) Semester-I
NEP-14-2 / 01MSCCH05 - Industrial Chemicals and Environment

P. Pages : 2

Time : Three Hours



GUG/W/24/15074

Max. Marks : 80

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- Notes : 1. All five questions are compulsory and carry equal marks.
2. Write chemical equation & draw diagram whenever necessary.

1. a) Explain manufacture and applications of the following chemicals: 8

i) Hydrochloric acid

ii) Nitric Acid

b) State analysis and hazards in handling following Gases. 8

i) Carbon Monoxide

ii) Phosgene

OR

c) Give the large-scale production of Oxygen. 4

d) Explain the hazards in handling of fluorine. 4

e) Explain applications of bleaching powder. 4

f) State manufacture processes for hydrogen peroxide. 4

2. a) Explain the preparation of ultrapure metals for semiconductor technology. 8

b) State importance of biocatalysis in green chemistry. 8

OR

c) Give the preparation of ferrous and non-ferrous metals. 4

d) Write a short note on ecosystem. 4

e) State biogeochemical cycle of carbon. 4

f) Discuss the importance of Biocatalysis in chemical industry. 4

3. a) What is air pollution? Explain chemical and photochemical reactions Occurring in atmosphere. 8
- b) Write a short note on. 8
- i) Ozone layer Depletion.
- ii) Greenhouse effect and global warming.

OR

- c) Explain the harmful effect of photochemical smog? 4
- d) Describe the methods for control of air pollution? 4
- e) Explain methods of estimation of CO and NO₂ . 4
- f) How particle size and chemical nature affect air pollution? 4

4. a) Discuss the nuclear disaster and its management. 8
- b) Write brief note on. 8
- i) Solid phase peptide synthesis.
- ii) End group synthesis.

OR

- c) Differentiate between nuclear fusion and nuclear fission. 4
- d) What is tidal energy and hydel energy. 4
- e) Write a short note on disposal of nuclear waste? 4
- f) What is solar energy and geothermal energy? 4

5. a) State any two applications of Hydrogen peroxide. 2
- b) How acetylene gas can be stored? 2
- c) What is ecosystem? 2
- d) Write short note on biocatalysts? 2
- e) Write major regions of Atmosphere? 2
- f) What is Photochemical smog? 2
- g) What is nuclear pollution? 2
- h) What are foul smelling gases. 2
