M.Sc.(Chemistry) (NEP Pattern) Semester-I

NEP-14-2 / 01MSCCH05 - Industrial Chemicals and Environment

P. Pages : 2 **GUG/W/23/15074**

Time : Three Hours * 8 0 0 0 * Max. Marks : 80

Notes : 1. All questions are compulsory and carry equal marks.
2. Write chemical equation and 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 chemicals. **8**
i) Caustic soda
ii) Sodium thiosulphate

OR

c) Explain the hazards in handling of potash alum. **4**

d) Explain the method for storing of sulphur dioxide. **4**

e) Explain the uses of following gases. **4**
i) Acetylene
ii) Phosgne

f) Explain applications of bleaching powder. **4**

2. a) Explain preparation of ferrous and non-ferrous metals in detail. **8**

b) What is biocatalysis? Explain its importance in chemical industry. **8**

OR

c) Write a short note on ecosystem. **4**

d) State biogeochemical cycle of nitrogen. **4**

e) Give the preparation of ultrapure metals for semiconductor technology. **4**

f) Explain the importance of biocatalysis in green chemistry. **4**

3. a) What is greenhouse effect? Explain ozone depletion by oxides of nitrogen. **8**

b) What is air pollution? Explain chemical and photochemical reactions in atmosphere. **8**

OR

	c)	Explain the effects of air pollution on living organisms and vegetation.	**4**
	d)	Enlist sources of air pollution. Describe classification of air pollutants.	**4**
	e)	Explain methods of estimation of CO and NOx.	**4**
	f)	Discuss the environmental effect of ozone.	**4**
4.	a)	Explain the following sources of energy. i) Coal ii) Petrol	**8**
	b)	Discuss the nuclear disaster and its management.	**8**

OR

	c)	What is tidal energy and hydel energy?	**4**
	d)	Explain the term disposal of nuclear waste.	**4**
	e)	Explain the solar energy in detail.	**4**
	f)	Differentiate between nuclear fusion and nuclear fission.	**4**
5.	a)	State any two applications of Hydrogen peroxide.	**2**
	b)	Write chemical formula of potash alum.	**2**
	c)	Define semiconductors.	**2**
	d)	What are different segments of Environment?	**2**
	e)	What is Photochemical smog?	**2**
	f)	Write molecular formula of chlorofluorocarbon.	**2**
	g)	How hydrogen can be used as source of energy.	**2**
	h)	What is nuclear pollution.	**2**

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