



SB-3581

M. Sc. (Part - II) Examination
March / April - 2011
Environmental Chemistry : Paper - I
(Chemistry in Industry)

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दशांश के निशानीवाणी विगतो उत्तरवही पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="M. Sc. (Part - 2)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="Environmental Chemistry - 1"/>	<input type="text"/>
Subject Code No. : <input type="text" value="3"/> <input type="text" value="5"/> <input type="text" value="8"/> <input type="text" value="1"/>	Section No. (1, 2,.....) : <input type="text" value="1&2"/>
	<input type="text" value="Student's Signature"/>

(2) All questions are compulsory.

SECTION - I

- 1 (a) Give an account of manufacture of industrially important chemicals using hydrogenation process. 4
- (b) Discuss the sulphonation of naphthalene under various conditions and emphasise their applications. 4
- (c) Give a brief account of industrially important chemicals obtained by Nitration. 4

OR

- 1 (a) Give a brief account of industrially important chemicals obtained by Halogenation. 4
- (b) How is amination carried out for the manufacture of chemicals of industrial importance on large scale ? 4
- (c) Discuss the sulphonation of α - and β - naphthol under various conditions. 4
- 2 (a) Describe various methods used for the treatment and disposal of radioactive waste. 4
- (b) What is toxicity ? Explain different methods for its measurement. 4

(c) Explain the term flash point and fire point of materials. 4

OR

2 (a) Explain in brief guidelines for safe handling of flammable and combustible materials. 4

(b) Discuss briefly on house keeping in industry and Lab. 4

(c) Give important characteristics of fire extinguishers. 4

3 (a) What is an ionic liquid ? Give its application in Heck reaction. 4

(b) Explain : application of super critical fluids in dry cleaning process. 4

(c) What are biopesticides ? Explain its types in detail. 3

OR

3 (a) Write a short note on : ILs chemical processing, organic synthesis and catalysis. 4

(b) Write a short note on application and commercial process of super critical fluids. 4

(c) Discuss green approach involved in 3

(i) Claisen-Schmidt reaction and

(ii) Diels-Alder reaction.

SECTION - II

4 (a) What are particulates ? Explain the source and classification of particulates. 4

(b) Give the sources and control of (i) SO_x and (ii) hydrocarbon emissions. 4

(c) Give brief account of inorganic water pollutants and thermal pollutants. 4

OR

4 (a) What is "Chemical Speciation" ? Explain the "Chemical Speciation" with suitable example. 4

(b) Describe in brief the nitrogen and phosphorus cycle in nature. 4

(c) Discuss the effect of ionizing radiation on human beings. 4

5 (a) Give salient features of the Environment (protection) Act 1986. 4

- (b) Discuss the major stages of environmental impact assessment process. 4
- (c) Give an account of integrated pollution prevention and control act. 4

OR

- 5 (a) Explain the power and functions of state board for pollution control. 4
- (b) Discuss briefly the significant features of the Water Prevention and Control of Pollution Act-1974. 4
- (c) Discuss legislation and legal aspects related to environment. 4
- 6 (a) What is an error ? Give the classification of error in detail. 4
- (b) In replicate determination of percentage of iron sample found were 80.40, 80.60, 80.55, 80.90, 80.95 and 80.00. Find out the mean, median, range and standard deviation. 4
- (c) Write a short note on : Skewness and Variance. 3

OR

- 6 (a) Give the formula for average and relative error, mean, median, range average and standard deviation of single measurements, average and standard deviation of mean coefficient of variance. 4
- (b) In replicate determination percentage of Ni found were 24.40, 24.20, 24.50, 24.10 and 25.50. Will any of these results be discarded ? If yes, why ? 4
- (c) Solve the following using binomial formula : 3
 - (i) $(X + Y/4)^n$ first five terms
 - (ii) $(2X + 5)^{12}$ first five terms.
