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SB-3587

M. Sc. (Part-II) (SF) Examination

March / April – 2011

Chemistry in Industry : Paper-I

(Pharmaceutical Chemistry)

Time : **3** Hours] [Total Marks : **70**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **M.Sc, Part-2 (SF)**

Name of the Subject :

☛ **Chemistry in Industry : Paper-I**

☛ Subject Code No. : **3 5 8 7** ☛ Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

(2) Answer to the two sections should be written in separate answer-book.

(3) Figures to the right indicate full marks of the questions.

SECTION - I

1 Define 'Unit Process' and Unit operation'. Enlist various sulphonating agents used for the sulphonation. Describe various industrially important chemicals obtained from benzene, naphthalene and anthracene by sulphonation. **12**

OR

1 Define amination. Discuss the industrially important chemicals derived by reductive amination and aminolysis. **12**

2 (a) What is stoichiometry ? Write and balance the overall equation for the manufacture of vinyl chloride from ethylene, $C1_2$ and O_2. **12**

(b) Explain in detail waste management and disposal methods.

OR

2 Explain in brief : 12

(a) Principal of extraction and leaching

(b) Environmental safety

(c) Risk assessment

3 Answer any **three** of the following : 11

(a) Describe the waste minimization with suitable examples.

(b) Define supercritical fluids. Discuss applications of supercritical CO_2 in dry cleaning and decaffeination of coffee.

(c) Differentiate conventional and microwave synthesis. Give a brief account of biodegradable polymers.

(d) Write the green synthesis for :

(i) Adipic acid

(ii) Methyl methacrylate

SECTION - II

4 Give an account of: 12

(a) Global warming

(b) Nuclear fall out

(c) Water quality parameters

OR

4 Explain in detail : 12

(a) Effects of radiation on life

(b) Green house effect

(c) Photochemical smog.

5 (a) Distinguish between accuracy and precision with suitable illustrations. 12

(b) Give the various methods of collecting data. Discuss any one of them.

(c) Explain Q-test for rejection of data.

OR

5 Write a note on: 12

(a) Systematic and random errors

(b) Skewness and variance

(c) Programming in chemistry

6 Answer any **three** of the following : **11**

(a) Give the synthetic methods for imidazole and its reactions.

(b) Give the synthesis for quinazoline. Discuss its reactions.

(c) Give any two syntheses for benzothiazole. Discuss its reactions.

(d) Give the structure of the following:

(i) Thiazolo $[4,5-b]$ pyrazine.

(ii) 2H - 1,3 diazepin

(iii) Furo $[3,2-b]$ furan