

2122

B.A./B.Sc. (General) Third Semester  
Industrial Chemistry  
Paper - A: Material Science

Time allowed: 3 Hours

Max. Marks: 75

**NOTE:** Attempt five questions in all, including Question No. IX (Unit-V) which is compulsory and selecting one question each from Unit I - IV.

x-x-x

**UNIT - I**

- I. a) Explain in detail the manufacturing process of cement.  
b) Write a complete note on Super Alloys. (9,6)
- II. Write notes on the following:-  
a) Alloy steels  
b) Mercerization  
c) Moulding of plastics into articles (3x5)

**UNIT - II**

- III. a) Discuss kinetics and mechanism of process of acetanilide to P-nitroacetanilide.  
b) Explain kinetics of halogenations reactions. (8,7)
- IV. a) Discuss in detail commercial manufacturing of chloromethanes.  
b) Explain different reagents for halogenations. (8,7)

**UNIT - III**

- V. Describe commercial manufacturing of the following:-  
a) Maleic anhydride  
b) Cellulose acetate (7,8)
- VI. Discuss mechanism of following:-  
a) Vapour phase oxidation  
b) Hydrolysis (8,7)

**UNIT - IV**

- VII. Discuss in brief commercial manufacturing of following:-  
a) Ethyl benzene  
b) Phenyl ethyl alcohol  
c) P-aminophenol (3x5)

(2)

VIII. Explain the following:-

- a) Commercial manufacturing of Aniline
- b) Hydrogenation of vegetable oil

(7,8)

UNIT - V

IX. Answer the following in brief:-

- a) Spinning of fibers
- b) High speed steels
- c) Commercial manufacturing of Benzoic acid
- d) Hydrolyzing agents
- e) Metal and alkali reductions

(5x3)

x-x-x