Exam Code: 0003
Sub. Code: 0277

1129

B.A./B.Sc.(General)-3rd 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.*

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UNIT – I

I. (a) Discuss in detail various types of Alloy Steels.

(b) Explain the manufacturing process of Cement in detail. (7+8)

II. Write notes on the following: -

(a) Mercerization

(b) Polymer inhibitors

(c) Moulding of plastics into articles (5+5+5)

UNIT – II

III. (a) Discuss kinetics and mechanism of nitration process of benzene to nitrobenzene.

(b) Explain different types of nitrating agents with significance. (8+7)

IV. (a) Explain commercial manufacturing of chlorobenzenes.

(b) Discuss kinetics of side chain and nuclear halogenations of aromatic compounds. (7+8)

UNIT – III

V. Explain commercial manufacturing of the following: -

(a) Maleic anhydride

(b) Cellulose acetate

(c) Benzoic acid (5+5+5)

VI. (a) Explain kinetic and mechanism of vapour phase oxidation.

(b) Discuss in detail mechanism of hydrolysis. (8+7)

P.T.O.

UNIT-IV

VII. Describe briefly commercial manufacturing of the following: -

(a) P-Amino phenol

(b) N-Alkyl aniline

(c) Ethyl benzene (5+5+5)

VIII. (a) How will you manufacture methanol from carbon monoxide and hydrogen.

(b) Discuss methods of iron and acid reduction. (8+7)

UNIT-V

IX. Discuss the following in brief: -

(a) Polymer initiators

(b) Super alloys

(c) Different reagents for halogenations

(d) Mechanism of liquid phase oxidation

(e) Metal and alkali reductions (3+3+3+3+3)

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