

Bachelor of Science (B.Sc.) Semester-I (C.B.S.) Examination
INDUSTRIAL CHEMISTRY (ICH-101)
Compulsory Paper — 1

Time : Three Hours]

[Maximum Marks : 50

N.B. :— (1) All the **FIVE** questions are compulsory and carry equal marks.

(2) Draw diagrams and give equations wherever necessary.

1. (A) Give the mechanism of cationic addition polymerization. 5
(B) Explain initiation, propagation, termination and chain transfer steps in polymerization. 5

OR

(C) Give industrial application of Nylon-66. 2½
(D) Give the synthesis of polyacrylonitrile. 2½
(E) Write a note on Graft polymer. 2½
(F) Differentiate between thermoplastic and thermosetting resins. 2½

2. (A) Describe the process of fractional distillation of crude oil. 5
(B) How is starch manufactured industrially ? 5

OR

(C) Write a note on "Natural Gas". 2½
(D) Give the industrial applications of cellulose. 2½
(E) Explain cracking and reforming. 2½
(F) Describe the preparation of acetate rayon. 2½

3. (A) Write notes on the following :
(i) Bubble column, and
(ii) Packed column. 5

(B) Give an account of Forced circulation evaporators in industries. 5

OR

(C) What are the objectives of evaporation in industry ? 2½

(D) What is evaporator economy ? How is it achieved ? 2½

(E) Explain the working of bubble column for absorption. 2½

(F) How are gases absorbed in industrial process ? 2½

4. (A) Explain, with flowsheet diagram, different methods of distillation. 5

(B) What is the composition of petroleum ? Explain the carbide theory of petroleum. 5

OR

(C) Write the applications of filtration. 2½

(D) Write a note on continuous distillation. 2½

(E) Explain the separation of azeotropics mixture with suitable example. 2½

(F) Explain the process of catalytic cracking of petroleum. 2½

5. Attempt any **TEN** of the following :

(i) Define hetero chain polymer.

(ii) What is condensation polymerization ?

(iii) Define : initiator and inhibitor.

(iv) Name two industrially important compounds obtained from cellulose.

(v) Define hydroforming.

(vi) Give two industrial applications of starch.

(vii) Define absorption.

(viii) Draw the schematic diagram of spray column in absorption.

(ix) Name the equipments used in evaporation process.

(x) Name different methods of filtration.

(xi) Explain the term thermal cracking.

(xii) Give any two advantages of pressure filter. 1×10