

KNT/KW/16/5065

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