

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**

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|---|----|
| (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**

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| (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 <b>TEN</b> 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 |