NKT/KS/17/5065

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

Time : Three Hours] [Maximum Marks : 50

Note :— (1) **ALL** questions are compulsory and carry equal makrs.
(2) Write equations and draw well labelled diagrams wherever necessary.

1. (A) What is Condensation Polymer ? Describe the synthesis of monomers used for nylon 66. Give its industrial applications. 5

(B) Write notes on the following :—
(i) Polyethylene, and
(ii) Polypropylene. 5

OR

(C) Give the synthesis of Polyacrylonitrile. 2½

(D) Differentiate between thermoplastic and thermosetting resins. 2½

(E) Write a note on graft copolymer. 2½

(F) Give preparation of urea formaldehyde resin. 2½

2. (A) Discuss the structural differences in cellulose and starch. Draw their structures. Name any two resources of them. 5

(B) Write notes on the following :—
(i) Cracking and
(ii) Reforming of Petroleum. 5

OR

(C) Give the industrial application of starch. 2½

(D) Write a note on 'Natural gas'. 2½

(E) Explain thermal reforming with a flow diagram. 2½

(F) Give preparation of oxalic acid from cellulose. 2½

3. (A) What are spray columns and packed bubble columns ? How these columns are used in the process of absorption ? 5

(B) Define gas absorption. State and explain the selection criteria for solvent in absorption. 5

OR

(C) Differentiate between falling film evaporation and climbing film evaporator. 2½

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

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

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

4. (A) What is the composition of Petroleum ? Explain the carbide theory of petroleum. 5

(B) Define filtration. What is constant rate and constant pressure filtration ? Explain. 5

OR

(C) Explain the process of catalytic cracking of Petroleum. 2½

(D) Explain briefly azeotropic distillation. 2½

(E) Give applications of filtration. 2½

(F) Explain continuous distillation process. 2½

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

(i) What is Polyacrylonitrile ? 1

(ii) Is Natural rubber flexible ? 1

(iii) What is Natural gas ? 1

(iv) Write the properties of cellulose. 1

(v) How is oil gas obtained for laboratory use ? 1

(vi) Write down the polymerization reaction for forming hydrocarbons. 1

(vii) Define isomerism. 1

(viii) Name the properties of liquid that influence evaporation. 1

(ix) Name the equipments used in absorption. 1

(x) Explain the term centrifugal filtration. 1

(xi) Give any two examples of Natural polymers. 1

(xii) What are Azeotropes ? 1