NRT/KS/19/2032

Bachelor of Science (B.Sc.) Semester—I Examination

INDUSTRIAL CHEMISTRY (ICH–101)

Optional 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 write equations wherever necessary.

1. (A) What is anionic polymerization ? Discuss with example anionic polymerization. 5

   (B) What is Zeigler-Natta catalyst ? Give the synthesis of it. How it is useful in Zeigler-Natta polymerization ? Give its advantages. 5

OR

   (C) Write a note on Hetero-Chain Polymers. 2½

   (D) Write a reaction when styrene has been grafted onto chlorinated butyl rubber and polyvinyl chloride in the presence of Lewis acids. 2½

   (E) Write a short note on thermosetting resin. 2½

   (F) Give the synthesis and uses of Nylon-6. 2½

2. (A) What is Starch ? Give the preparation and properties of starch. 5

   (B) Write notes on the following :

   (i) Hydroforming

   (ii) Isomerisation. 5

OR

   (C) Give the industrial applications of Cellulose. 2½

   (D) Write in brief on “Natural Gas”. 2½

   (E) Write a note on “Crude Petroleum”. 2½

   (F) What is Cracking ? How is Kerosene Cracked ? 2½

3. (A) What is evaporator ? Explain falling film evaporator with well labelled diagram. 5

   (B) Write notes on the following :

   (i) Spray Column

   (ii) Packed Bubble Column. 5

OR

   (C) Give the applications of evaporator. 2½

   (D) What is absorption ? Explain gas absorption. 2½

   (E) Discuss in short “Tube evaporator”. 2½

   (F) What is packed column ? Give its advantages and disadvantages. 2½

4. (A) Why can’t we separate azeotropes with the simple distillation process ? Explain with example the process for azeotropes distillation. 5

   (B) Explain the following terms :

   (i) Gravity filtration

   (ii) Vacuum filtration. 5

OR

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(C) What is fractional distillation of petroleum ? Why fractional distillation is better than simple distillation ? 2½

(D) Write a note on “Hot filtration”. 2½

(E) Discuss in short distillation column. 2½

(F) Give the applications of filtration. 2½

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

(i) Polymer containing ester group is called as ?

(ii) Give any two applications of Bakelite.

(iii) Draw the structure of Bakelite polymer.

(iv) How oil is obtained ?

(v) Give any two examples of natural gas.

(vi) Define tube hydroforming.

(vii) Give any two disadvantages of bubble column.

(viii) Define upward flow evaporator.

(ix) What is natural circulation evaporator ?

(x) What is supernatant liquid ?

(xi) Why do we wet the filter paper when setting it into the funnel before filtering a solution ?

(xii) What is crude oil ? 10×1=10