

**B.TECH**  
**(SEM IV) THEORY EXAMINATION 2018-19**  
**INDUSTRIAL CHEMISTRY**

**Time: 3 Hours****Total Marks: 70****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 7 = 14**

- (a) Mention the name of various products obtained by Fractional distillation of Petroleum.
- (b) Explain Unimolecular, Bimolecular and Pseudomolecular reactions. Give appropriate examples.
- (c) Write a short note on Fries Rearrangement.
- (d) Explain the conformations of Ethane.
- (e) Explain the following term :
  - i) Gold number
  - ii) Tyndall effect.
- (f) How will you distinguish between Physical adsorption and Chemical adsorption.
- (g) What happens when Glucose is treated with –
  - i) Bromine water
  - ii) Methanol in the presence of HCl.

**SECTION B****2. Attempt any three of the following: 7 x 3 = 21**

- (a) What is Huckel Rule? Explain the criteria for Aromaticity applying on Benzene and Cyclobutadiene.
- (b) What do you mean by Enzyme Catalysis ? Give the mechanism of enzyme catalysed reactions.
- (c) Write the mechanism of following reactions –
  - i) Benzoin condensation
  - ii) Diels Alder reaction.
- (d) What are the Disaccharides ? Write the synthesis of Sucrose.
- (e) Define the Surface Tension. How is Surface Tension determined using Stalagmometer?

**SECTION C****3. Attempt any one part of the following: 7 x 1 = 7**

- (a) Explain Geometrical Isomerism. Discuss the Geometrical isomerism of Maleic acid and Fumaric acid.
- (b) Write the short note on –
  - i) Recrystallization
  - ii) Sublimation

4. Attempt any *one* part of the following: 7 x 1 = 7
- (a) Explain with example kinetics and mechanism of Consecutive reactions.
  - (b) Describe Acid-Base catalysis with suitable example.
5. Attempt any *one* part of the following: 7 x 1 = 7
- (a) Define the following reactions and their mechanism –
    - i) Hofmann degradation of amide
    - ii) Friedel Craft alkylation
  - (b) Write only reactions of the followings –
    - i) Lederer Manasse reaction
    - ii) Chichibabin reaction
    - iii) Carbyl amine reaction
    - iv) Coupling reaction
6. Attempt any *one* part of the following: 7 x 1 = 7
- (a) Explain the structure of Pyridine. What happens when Pyridine reacts with –
    - i) Bromine at 300°C
    - ii) NaNH<sub>2</sub> at 100°C
  - (b) Explain the term Peptide bonding in Protein. What do you know about the Primary, Secondary and Tertiary structure of Protein?
7. Attempt any *one* part of the following: 7 x 1 = 7
- (a) Define Adsorption. Explain the effect of Pressure and Temperature on adsorption.
  - (b) Write short notes on –
    - i) Peptization
    - ii) Dialysis
    - iii) Electrophoresis
    - iv) Coagulation