

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

Time: 3 Hours

Total Marks: 70

Note: Attempt all sections equally and give answers in a neat and orderly manner.

SECTION A

1. Attempt all questions briefly. 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's 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 300⁰C
 - ii) NaNH₂ at 100⁰C
 - (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