

UNIT - IV

8. (a) What are thermosetting resins ? Give the preparation, properties and uses of PF and UF (Phenol Formaldehyde and Urea Formaldehyde). 15
- (b) Write a short note on silicones. 5
9. (a) Write a short note on IR spectroscopy. 10
- (b) Explain the principle of DTA. 10

Roll No.

24005

B. Tech. 1st Semester (Common for All Branches) Examination - February, 2022

ENGINEERING CHEMISTRY

Paper : CH-101-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is compulsory. Attempt five questions in all selecting *one* question from each Unit. All questions carry equal marks.

1. Attempt following questions : 2 × 10 = 20
- (a) Define incongruent melting point.
- (b) Explain the concept of promoters.
- (c) Write short note on ion exchange process.

- (d) Define 'viscosity'
- (e) Define Acid value.
- (f) What is Homogeneous catalysis ?
- (g) Explain Lambert beer's law.
- (h) What are elastomers ?
- (i) Define thermoplastic polymer.
- (j) What is hardness of water ?

UNIT - I

- 2. (a) Explain the phase rule of One Component by using water system with suitable diagram. 15
- (b) Explain the absorption theory of heterogeneous catalyst with suitable example. 5
- 3. (a) Draw a well labeled phase diagram of Zn-Mg system and explain its feature. 15
- (b) Write short note on inhibitors. 5

UNIT - II

- 4. (a) Explain in brief hardness of water and its method of determination. 10

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- (b) What do you mean by the term alkalinity of water? What are the causes of alkalinity in water? Write steps for the determination of alkalinity of water due to temporary hardness. 10
- 5. (a) What do you understand by electro-dialysis? How does it help in desalination of brackish water? 10
- (b) Write a short note on : 5 × 2 = 10
 - (i) Boiler corrosion
 - (ii) Caustic Embrittlement

UNIT - III

- 6. (a) Explain the mechanism of wet corrosion. 10
- (b) Write a short note on : 5 × 2 = 10
 - (i) Soil corrosion
 - (ii) Galvanic corrosion
- 7. (a) What are lubricants? How they are classified? Explain with example. 10
- (b) Write short note on : 5 × 2 = 10
 - (i) Flash and fire point
 - (ii) Iodine value

24005-1100-(P-4)(Q-2)/(22) (3)