**24005**

**B.Tech. 2nd Semester F-Scheme Examination,**
**May–2018**
**ENGINEERING CHEMISTRY**
**Paper–CH–101–F**
**(Common for All Branches)**

*Time allowed : 3 hours ]* *[ Maximum marks : 100*

*Note : Attempt **five** questions in all, selecting at least **one** question from each section. **Q. No. 1 is compulsory.** All questions carry equal marks.*

1. (a) What do you mean by congruent melting point ?
   (b) What is reduced phase rule ?
   (c) What is induced catalysis ?
   (d) Distinguish between hard water and soft water.
   (e) Define coagulation.
   (f) What is meant by electrochemical corrosion ?
   (g) What do you understand by viscosity index of a lubricant ?
   (h) Define Iodine value.
   (i) What do you understand by homopolymer and copolymer ?
   (j) Define Lambert's law. 2×10=20

## Section–A

2. (a) Draw and explain the phase diagram of Lead-Silver system in detail. 10

   (b) Write short note on cooling curves. 10

3. (a) Give a brief account of enzyme catalysis and explain its mechanism. 10

   (b) Give a brief account of the theories given to explain the mechanism of homogeneous and heterogeneous catalysis. 10

## Section–B

4. (a) What is hardness of water ? Describe the estimation of hardness of water by any one method. 10

   (b) Discuss the boiler corrosion, in brief. 10

5. (a) Discuss the zeolite process for the removal of hardness of water. 10

   (b) What is meant by Desalination ? Describe the process by electrodialysis method. 10





## Section–C

6. (a) Define corrosion. Explain dry corrosion in detail. 10

   (b) Write a note on stress corrosion. 10

7. (a) Define lubricants. How are they classified ? 10

   (b) Describe the following properties of lubricants :

   (i) Cloud point and Pour point 5

   (ii) Flash point and Pour point 5

## Section–D

8. (a) Give the preparation, properties and uses of PF and UF resins. 10

   (b) What are silicones ? Discuss their important properties and uses. 10

9. (a) Describe the principle technique and applications of thermogravimetric analysis. 10

   (b) Write a note on flame photometry. 10