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**B.Tech. 2nd Semester F-Scheme Examination,  
May-2018**

**ENGINEERING CHEMISTRY**

**Paper-CU-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 x 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 electro dialysis 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