

Roll No. ....

Total Pages : 2

BT-1/D-19

31011

CHEMISTRY (2003-04 SYLLABUS)

Paper : CH-101E

Time : Three Hours]

[Maximum Marks : 100

**Note :** Attempt *five* questions in all, selecting at least *one* question from each unit. All questions carry equal marks.

**UNIT-I**

1. (a) Define entropy, enthalpy and free energy.  
(b) Derive Clausius-Clapeyron equation.  
(c) Define chemical potential. Give its significance. 5+10+5
2. (a) Discuss eutectic system with incongruent melting point.  
(b) Discuss phase diagram for water. Explain its unique features. 10+10

**UNIT-II**

3. (a) Define hardness. Give methods of its determination. Discuss its units.  
(b) Discuss the processes of coagulation and sedimentation used for water treatment. 8+12

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4. (a) Discuss the process of desalination and give its applications.  
(b) What do you understand by sludge formation? How it can be prevented?  
(c) Describe water softening process. 6+8+6

**UNIT-III**

5. (a) Giving examples, discuss Galvanic cell and concentration cell.  
(b) Explain the terms Galvanic corrosion and water line corrosion. Give examples. 10+10
6. (a) Discuss the measures adopted to prevent corrosion.  
(b) Illustrate the mechanism of lubrication. Discuss the types of additives used in lubricants. 10+10

**UNIT-IV**

7. (a) Discuss the types of polymerization. Give examples in each class.  
(b) Discuss the method of preparation and applications of PVA and GR-N. 12+8
8. (a) Discuss various analytical methods used for characterization of polymers.  
(b) Discuss the method of preparation of silicones. Describe the properties of silicones. 12+8

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