

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

31011/1,100/KD/1678

[P.T.O.  
11/12

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 silicon. Describe the properties of silicon. 12+8