

Roll No.

Total Pages : 3

BT-1/D-17

31011

CHEMISTRY

Paper : CH-101 E

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) Derive Gibb's Helmholtz equation.
 (b) Explain the term entropy. Discuss entropy change for an ideal gas.
 (c) Define second law of thermodynamics and give its limitation. <http://www.kuonline.in> (7+7+6=20)
2. (a) Draw a labelled phase diagram of water and interpret the findings from melting curve in it.
 (b) Derive Gibb's phase rule equation.
 (c) With the help of a suitable example, discuss eutectic system. (7+7+6=20)

UNIT-II

3. (a) Discuss the types of impurities of water.
 (b) What do you understand by hardness of water? Give its units.
 (c) Discuss the methods used for prevention of sludge. (8+6+6=20)

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4. (a) Differentiate between the process of sedimentation and coagulation.
 (b) Discuss the process of disinfection.
 (c) Describe the process of electro dialysis. Write down its application. (10+5+5=20)

UNIT-III

5. Write notes on the following:
 (a) Dry and wet corrosion.
 (b) Galvanic corrosion.
 (c) Concentration cell. (8+6+6=20)
6. (a) Discuss the electrochemical theory of corrosion.
 (b) What do you understand by Stress corrosion?
 (c) Describe the Mechanism of lubrication. (7+7+6=20)

UNIT-IV

7. (a) Discuss different types of polymerization with examples.
 (b) Discuss the method of preparation, properties and technical applications of the following:
 (i) PVC
 (ii) PF. _____ (6+14=20)

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8. (a) What are conductometric titrations ?
- (b) Discuss the types of curves obtained when a strong acid is titrated with a strong base.
- (c) Discuss the principle and applications of DTA.

(6+6+8=20)

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