Roll No. .. .. –

Total Pages : 2

31015

BT-1/D-19

APPLIED CHEMISTRY

Paper–AS-103 N

Time : Three Hours] [Maximum Marks : 75

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

UNIT–I

1. Derive the Gibbs-Helmholtz equation. 15

2. Define the terminology used in Phase Diagram :

   Phase, Component, Degree of Freedom, Triple point and eutectic temperature. (5×315)

UNIT–II

3. Explain the Lime-Soda process used for softening of hard water. Write down the chemical reactions involved in the process. 15

4. (a) Explain the term : Scale and sludge formation, causes and prevention. 10

   (b) Discuss the twelve principle of green chemistry. 5

UNIT–III

5. Write the electrochemical theory of corrosion with the help of various reactions involved in it. 15

6. Explain the following terms :

   (a) Greases in general and consistency and Drop point test in particular.

   (b) Saponification and Acid number.

   (c) Viscosity and viscosity Index. (3×5=15)

UNIT–IV

7. What are the different methods of manufacturing cement. Explain their relative merits and demerits. 15

8. Write note on the following :

   (a) Carbon Nanotubes.

   (b) Nanocrystal.

   (c) Nanowires. (3×5=15)