1985

B.E. / B.Tech 2nd Semester E-Scheme Examination,

May 2014

CHEMISTRY

Paper-CH-101-E

Common for all Branch

Time allowed : 3 hours] *[Maximum marks : 100*

Note: *Attempt any **five** questions. All questions carry equal marks.*

1. (a) Explain the concept of Shemical potential. Give its significance. 10

   (b) Derive Clausius-Clapeyron equation and discuss its important applications. 10

2. (a) Discuss the phase diagram of one component system along with its applications. 14

   (b) What do you understand by the phase rule ? Define the various terms involved in it. 6

3. (a) What do you understand by hardness of water? How is it determined by EDTA method ? 10

EDTA. 20 ml of a water sample consumed 10ml of the same EDTA solution using Eriochrome black-T as on indicator. Calculate the total hardness of water sample in ppm. 10

4. (a) Write a detailed note on mixed bed demineralisation. How is the bed regenerated? 10

(b) Explain the process of disinfection for treatment of domestic water. 10

5. (a) What is corrosion ? Explain the various factors affecting rate of corrosion. 10

(b) Write short notes on the following : 5×2

(i) Pitting corrosion

(ii) Water line corrosion

6. (a) Define lubrication and explain its mechanism. 12

(b) Define and give significance of 4×2

(i) Flash point and fire point

7. Discuss preparation properties and uses of the following : 5×4

(a) PVC

(b) PVA

(c) Phenol formaldehyde resin

(d) Styrene-butadiene rubber (SBR)

8. (a) Discuss the principle, method and applications of thermogravimetric analysis. 10

(b) Write a short note on vibrational spectroscopy. 10