

B.Tech. I Year(R07)) Supplementary Examinations, May/June 2010
APPLIED CHEMISTRY
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Why is sterilization of water necessary? Discuss the various methods of sterilisation.
(b) 0.5 g of CaCO_3 was dissolved in dil. HCl and diluted to 1000 mL. 50 mL of this solution required 48 mL of EDTA solution for titration. 50 mL of hard water sample required 15 mL of EDTA solution for titration. 50 mL of same water sample on boiling, filtering etc., required 10 mL of EDTA solution. Calculate the different kinds of hardness in ppm. [9+7]
2. Write short notes on : [5+6+5]
 - (a) Priming and Foaming
 - (b) Phosphate conditioning
 - (c) Caustic embrittlement.
3. (a) What is oxidation corrosion and how does it take place? Describe the mechanism of oxidation corrosion.
(b) Describe the various factors influencing the rate of chemical corrosion. [8+8]
4. (a) Explain the following:
 - i. Alkali Cleaning
 - ii. Mechanical cleaning.
(b) Describe the principles involved in electro plating.
(c) Anodized coating is preferred for Aluminium - Give Reasons. [8+4+4]
5. (a) What are thermosetting Resins? Give the preparation, Properties and uses of any one thermosetting resin.
(b) Write the repeating unit of the following:
 - i. Polyester
 - ii. Polyethylene.
(c) Write the monomers of nylon 6,6. [10+4+2]
6. (a) Define Refractories and give the criteria of a good refractory.
(b) Describe refactoriness, thermal spalling and porosity of a refractory material. [6+10]
7. (a) What are synthetic lubricants? How they are superior to petroleum based lubricants?
(b) Define Grease? Under what conditions they are used as lubricants?
(c) What is the effect of temperature on viscosity? Explain. [6+6+4]
8. (a) Explain the significance of testing the initial and final setting time of cement and the process of enacting it.
(b) Give the important uses of cement in the construction industry. [10+6]
