PVP 14

Code: CS1T3, CE1T3, IT1T3, EC1T4

I B.Tech - I Semester – Regular Examinations – November 2015

ENGINEERING CHEMISTRY

(Common for CSE, CE, IT, ECE)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11x 2 = 22 M

1. a) Distinguish between temporary and permanent hardness of Water.
   b) Write short note on ion exchange process.
   c) Express the term break-point Chlorination.
   d) Write any four engineering applications of polymers.
   e) Explain disproportianation in addition polymerization.
   f) Distinguish between thermoplastic and thermosetting resins.
   g) What is the need of green chemistry?
   h) What is paint? What are the good characteristics of a good paint?
   i) Write any three factors that influence corrosion with respect to the nature of Environment.
   j) Define solar energy. Write two applications.
   k) What are high temperature super conductors?

PART – B

Answer any ***THREE*** questions. All questions carry equal marks. 3 x 16 = 48 M

2. a) Write any four differences between cold lime soda and hot lime soda process. Calculate the amount of lime and soda required for the treatment of 10,000 litres of raw water containing the following dissolved salts per litre $Ca(HCO_3)_2$ =16.2 mg, $CaCl_2$ = 11.1 mg, $MgSO_4$ = 12 mg, $NaHCO_3$ = 7.25 mg, CO_2 = 4.4 mgs. 8 M

b) What is meant by sterilization of water? Explain how sterilization of water Carried out by using bleaching powder and ozone? 8 M

3. a) Describe the method of preparation and properties of PVC, Bakelite and Polycarbonates. 8 M

b) Write the preparation, properties and engineering applications of any one Bullet proof plastic. 8 M

4. a) What is green chemistry? Explain aqueous phase green synthesis with suitable example. 8 M

b) What are fullerenes? Explain Carbon Bucky balls. Write any five applications of nanomaterials. 8 M

5. a) What is corrosion? Describe galvanic and differential aeration corrosion. 8 M

b) Explain the electrochemical theory of wet corrosion giving its mechanism. 8 M

6. a) Write different types of liquid crystals. Discuss their engineering applications. 8 M

b) What are the different types of semiconductors? Explain the controlled valance Semiconductor and organic semiconductor. 8 M