PVP 14

Code: EE2T3, ME2T3, AE2T3

I B.Tech - II Semester – Regular/Supplementary Examinations
May 2017

ENGINEERING CHEMISTRY
(Common for EEE, ME & AE)

Duration: 3 hours Max. Marks: 70

PART – A

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

11x 2 = 22 M

1. a) What is the end-point in EDA method? What is the coordination number of Ca in Ca-EDTA complex?
   b) What is the shape of C_{70}? It consists of 25 hexagons and 12 pentagons, true or false.
   c) What is Meissner effect?
   d) Give brief account on stereo specific polymers.
   e) Give four uses of polycarbonates.
   f) What are goals of green chemistry?
   g) Can we use a Nickel spatula to stir a solution of Copper sulfate? Given that $E^0_{Ni^{2+}/Ni}$ = 0.025 V and $E^0_{Cu^{2+}/Cu}$ = 0.34 V.
   h) Write two applications of superconductors.
   i) What is Green house effect? Which rays of SUN light is responsible for global warming?
   j) It's not safe to drink hard water, explain?

k) What is the chemical formula of rust?

PART – B

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

2. a) Give the chemical equations of removal of temporary hardness of water by heating. If 50 mL of a sample of a hard water consumed 15 mL of 0.01 M EDTA. What is the hardness of water? 8 M

   b) What is osmosis? How reverse osmosis is used for desalination of water? 8 M

3. a) Give the structure of Bakelite. What is meant by condensation polymerization? 8 M

   b) Explain any two methods of moulding of plastics into articles. 8 M

4. a) Write a note on super critical fluid extraction method. What are the basic principles of Green chemistry? 8 M

   b) Give one method of synthesis of Fullerenes. What are the engineering applications of nano-materials? 8 M

5. a) Write a note on stress corrosion and pitting corrosion. 8 M

b) Why is chromium used for coating iron? Discuss the various factors influencing the rate of corrosion. 8 M

6. a) Give some examples of semiconductors. Write a note on controlled valency semiconductors. 8 M

b) Write the different types of liquid crystals. Discuss their engineering applications. 8 M