

Code: CE1T3, CS1T3, EC1T4, IT1T3

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

ENGINEERING CHEMISTRY
(Common for CE, CSE, ECE, IT)

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks
11x 2 = 22 M

1. a) What are the ions caused for permanent hardness?
- b) Define desalination and reverse osmosis.
- c) What do you mean by ozonised water?
- d) State the bullet proof plastic with suitable example.
- e) What is Teflon and draw its structure?
- f) Write the principle of 'atom economy'.
- g) Describe the structure of C60 fullerenes.
- h) Write the short note on Galvanic Corrosion.
- i) Why the galvanized utensils are not used for the storing of food.
- j) Define superconductivity phenomenon with suitable example.
- k) Write short on Photo voltaic cell.

PART – B

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

2. a) Describe the removal of hardness of water by ion-exchange process with neat sketch and write its advantages. 8 M

b) How the micro organisms are removed from the municipal water by U-V radiation and Chlorination processes. 8 M

3. a) Explain the free radical and cationic mechanism of addition polymerization. 8 M

b) Describe the injection and blow film extrusion moulding of plastics. 8 M

4. a) Write a brief note on micro wave induced and ultrasound radiation methods in green synthesis. 8 M

b) Explain any two methods of synthesis of carbon nano tubes. 8 M

5. a) What is electrochemical corrosion? Explain its mechanism by evolution of hydrogen and absorption of oxygen. 8 M

b) Describe the two methods of cathodic protection. 8 M

6. a) Distinguish between stiochiometric and non-stiochiometric semiconductors. 8 M

b) What are liquid crystals? Explain their applications in LCD and engineering field. 8 M