

Code: **EE2T3, ME2T3, EM2T3**

**I B.Tech-II Semester-Regular Examinations - July 2014**

**ENGINEERING CHEMISTRY**  
**(Common for EEE, ME & ECM)**

**Duration: 3 hours**

**Marks: 5x14=70**

**Answer any FIVE questions. All questions carry equal marks**

1. a) Compare the types of hardness of water and explain the chemistry and process involved in Ion-Exchange process of softening the water. 7 M
- b) Briefly explain the process of Municipal Water Treatment with emphasis on disinfection. 7 M
2. a) Explain the concept involved in intrinsic semiconductors and organic semiconductors with suitable diagrams. 7 M
- b) What are liquid crystals? Explain their types and properties with suitable examples. 7 M
3. a) Explain the concept and methodology involved in harnessing heat energy from sun with suitable models and diagrams. 8 M
- b) Explain the concepts involved in solar reflection and green house phenomena involving solar energy. 6 M

4. a) Explain the concepts of wet and dry corrosions and the factors affecting the corrosion. 8 M
- b) Write short notes on 6 M  
i) Metallic Coatings and ii) Paints
5. a) Explain the concept of Condensation Polymerisation with suitable example and mechanism. 7 M
- b) Explain the concept and properties of bio-degradable polymers with suitable examples. 7 M
6. a) Explain the concept of compounding of plastics and the ingredients used in the process. 7 M
- b) Explain the engineering applications of plastics with suitable examples. 7 M
7. a) What are nano materials? Give a brief account of properties of nano materials. 7 M
- b) What are fullerenes? Explain their production, properties and application. 7 M
8. a) Explain the concept of Green Chemistry and the components involved in it. 7 M
- b) What are super critical fluids? Explain their role and principle involved as a component of green chemistry with suitable examples. 7 M