

Code: EE2T3, ME2T3, AE2T3

I B.Tech - II Semester – Regular Examinations – JULY 2015

ENGINEERING CHEMISTRY
(Common for EEE, ME & AE)

Duration: 3 hours

Max. Marks: 70

PART – A

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

11 x 2 = 22 M

1. a) What is meant by Electro dialysis?
- b) Express the term break-point Chlorination?
- c) Write short note on ion exchange process.
- d) Write the preparation of nylon 6:6.
- e) Distinguish between thermoplastic and thermosetting resins.
- f) Write any three engineering applications of polymers.
- g) Write any five applications of Nanomaterials.
- h) What is paint? What are the good characteristics of a good paint?
- i) Discuss the factors that affect the corrosion.
- j) Define semiconductor and super conductor.
- k) Write a note on photovoltaic cell.

PART – B

Answer any **THREE** questions. All questions carry equal marks. $3 \times 16 = 48 \text{ M}$

2. a) What is brackish water? Explain the Desalination of water by Reverse Osmosis method with neat diagram.

2 M + 6M

b) What is hardness of water? How do you express hardness? Explain the Different types of hardness of water.

2M + 3M + 3M

3. a) Define addition Polymerization. Explain free radical polymerization Mechanism of vinyl chloride compound.

2 M + 6M

b) What is meant by compounding of plastics? Explain the injection Moulding process with neat diagram.

2 M + 6M

4. a) Define Nanomaterial. Give examples. Write any two methods of Synthesis of carbon nanotubes.

2M + 2M + 4M

b) Explain green synthesis methods of phase transfer catalyst and ultra Sound with suitable example?

4M + 4M

5. a) Define corrosion? Differentiate between dry corrosion and wet corrosion? 2 M + 6M

b) What is galvanization and tinning? Write the differences. Write a brief account on varnishes. 8 M

6. a) Explain the term thermal conversion and photo conversion with respect to Harnessing solar energy? 4 M + 4M

b) Write notes on stoichiometric and non-stoichiometric semiconductor? 4 M + 4M