

Code: EE2T3, ME2T3, AE2T3

I B.Tech - II Semester – Regular Examinations – April 2016

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) Why do we add buffer solution during titration of hard water against EDTA solution?
- b) Define break-point chlorination.
- c) Write the structure of Ziegler-Natta catalyst.
- d) What are reinforced plastics?
- e) Write a note on atom economy.
- f) Mention the types of fullerenes .
- g) Why rusting of iron is quicker in saline water than in ordinary?
- h) Write a brief account on varnishes.
- i) Enumerate the any two differences between n-type and p-type semiconductors.
- j) What are liquid Crystals? Explain.
- k) Write a short note on solar heater.

PART – B

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

2.

a) Describe the Ion-exchange process for softening of water. What are its advantages over zeolite process? 8 M

b) What is potable water? Discuss the filtration processes that are employed for water purification. 8 M

3.

a) Explain the anion mechanism involved in addition polymerization. 4 M

b) Write a note on the following polymers

(i) Polystyrene 4 M

(ii) PTFE and 4 M

(iii) Bullet proof plastics 4 M

4.

a) Write about microwave induced method for green synthesis and its advantages 8 M

b) What are carbon nanotubes? Explain their types. 8 M

5.

a) What is corrosion? Enumerate the differences between Chemical and Electrochemical corrosion. 6 M

- b) Discuss briefly the various factors influencing the rate of corrosion of metals. 4 M
- c) Describe the Cathodic protection of metals. 6 M
- 6.
- a) Illustrate the Frenkel and Schottky defects. 8 M
- b) What are super conductors? Discuss their properties and uses. 8 M