

B.Tech I Year I Semester (R15) Regular & Supplementary Examinations December 2016

ENGINEERING CHEMISTRY

(Common to ECE, ME, EIE and IT)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- Write any two disadvantages of hard water.
 - Define caustic embrittlement.
 - Write any two engineering applications of Buna-S.
 - Write short note on silicones.
 - What is galvanic corrosion?
 - Give examples for cathodic and anodic inhibitors.
 - Write any two characteristics of fuel.
 - What is cetane number?
 - Write any two applications of acidic refractory material.
 - Write short note on fullerenes.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- What is breakpoint chlorination? Explain its significance.
 - Explain desalination of brackish water by electrodialysis method.

OR

- Explain zeolite method for the treatment of water.
 - Explain any three boiler troubles.

UNIT – II

- Differentiate between thermosetting and thermoplastic resins.
 - Explain the synthesis and applications of polyacetylene.

OR

- Explain cationic mechanism.
 - What are inorganic polymers? Write their applications.

UNIT – III

- Derive Nernst equation.
 - Explain electrochemical theory of corrosion.

OR

- What are the factors affecting corrosion based on nature of metal?
 - Explain in detail about cathodic protection.

UNIT – IV

- Write the manufacture of metallurgical coke by Otto Hoffmann's by product oven method and write advantages and disadvantages of power alcohol.

OR

- What is octane number? Explain the refining of petroleum.

UNIT – V

- Write the composition of cement and explain setting and hardening of cement.

OR

- Explain thick film, thin film and extreme pressure lubrication.