

Subject Code: R13204/R13**Set No - 1****I B. Tech II Semester Supplementary Examinations, April/May - 2017****ENGINEERING CHEMISTRY****(Com. to ECE, EEE, EIE, Bio-Tech., E Com E, Agri E)****Time: 3 hours****Max. Marks: 70**

Question Paper Consists of **Part-A** and **Part-B**
Answering the question in **Part-A** is Compulsory,
Three Questions should be answered from **Part-B**

PART-A

1. (a) Explain boiler corrosion and how it can be minimized.
- (b) Write notes on (i) galvanic cells (ii) electroplating (iii) natural gas.
- (c) Write the engineering applications of fullerenes.
- (d) How is styrene butadiene rubber prepared? What are its applications?

[4+12+ 3+3]

PART-B

2. (a) Discuss the complexometric titration method for estimation of hardness of water.
 - (b) Explain permutit process for softening of hard water.
 - (c) What are the drawbacks of natural rubber? Explain how to overcome these drawbacks.
- [6+4+6]
3. (a) What is meant by ion-selective electrode? Explain the working of glass electrode.
 - (b) What are primary and secondary batteries? Give examples.
 - (c) Explain fractional distillation of petroleum with a neat sketch.
- [6+4+6]
4. (a) Explain the environmental factors that are affecting rate of corrosion.
 - (b) Explain how sacrificial anodic process controls the base metal corrosion.
 - (c) Explain setting and hardening of cement with proper chemical equations.
- [6+4+6]
5. (a) How is Bakelite prepared? Mention its applications.
 - (b) What is tacticity? Explain the significance of stereoregular polymers.
 - (c) What are paints? Mention their constituents and functions.
- [6+4+6]
6. (a) Explain proximate analysis of coal and its significance.
 - (b) Write notes on petrol knocking.
 - (c) Write notes on disinfection and sterilization.
- [6+4+6]
7. (a) What are conducting polymers and explain p-type conducting polymers.
 - (b) Explain any one method for preparation of carbon nanotubes.
 - (c) Explain the working of fuel cell with example and mention its advantages.
- [6+4+6]

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