

Code: 15A51101

R15

B.Tech I Year I Semester (R15) Supplementary Examinations June 2017

ENGINEERING CHEMISTRY

(Common to ECE, ME, EIE & IT)

Time: 3 hours

Max. Marks: 70

PART - A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Write the chemical reaction (s) involved in softening of water using lime-soda method.
 - (b) Write the reaction of bleaching powder with water and state its importance.
 - (c) Briefly differentiate between thermoset and thermoplastic polymers.
 - (d) Give one example of Ziegler-Natta catalyst used in polymer preparation.
 - (e) Define the wet method of corrosion.
 - (f) Draw a H_2-O_2 fuel cell and write the electro chemical reactions involved in it.
 - (g) Write the composition of: (i) Producer – gas. (ii) Water – gas.
 - (h) Define octane number and cetane number.
 - (i) Define RUL of refractories.
 - (j) Briefly classify lubricants giving one example for each.

PART - B

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

UNIT - I

- 2 Explain why and how water is sterilized. What do you understand by residual chlorine and break-point chlorination?

OR

- 3 Describe one membrane method of water purification used for domestic purpose now-a-days.

UNIT - II

- 4 What is polyurethane? Why these polymers are called versatile engineering materials?

OR

- 5 What are silicones? How is silicone elastomer different from natural rubber?

UNIT - III

- 6 What are rechargeable batteries? Explain the working of Li-ion battery.

OR

- 7 Using a neat diagram, explain the working of a Daniel-cell. Do you use a salt – bridge in this cell? If yes, explain why?

UNIT - IV

- 8 What is the importance of proximate method of analysis of coal? Explain in detail.

OR

- 9 Classify fuels in detail giving example for each. Differentiate between solid, liquid and gaseous fuels.

UNIT - V

- 10 Describe the wet method of cement manufacture. What are its advantages / disadvantages over the dry method of cement manufacture?

OR

- 11 What are fullerenes? Mention their important characteristics and useful applications.
