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I/IV B.Tech (Supplementary) DEGREE EXAMINATION

November, 2019

First Semester

Time: Three Hours

Answer Question No.1 compulsorily.

Answer ONE question from each unit.

1. Answer all questions

Common for all Branches

Engineering Chemistry-I

Maximum : 60 Marks

(1X12 = 12 Marks)

(4X12=48 Marks)

(1X12=12 Marks)

- a Define alkalinity of water?
- b Write any two examples for coagulants
- c What is meant by colloidal conditioning?
- d Define Polymer
- e Write any two applications of PVC.
- f Write the types of adsorption.
- g Define calorific value of fuel.
- h Write the main applications of solar cells
- i Define carbonization of coal
- j Write any two applications of alumina.
- k Define composites.
- l Define flash and fire points.

UNIT – I

- 2 (a) Compare between hard water and soft water. 4M
- (b) Explain the following i).Boiler corrosion ii). prevention methods of scale 8M

OR

- 3 (a) Discuss any three disinfection methods. 4M
- (b) Discuss the method of treatment of brackish water by Electro dialysis 8M

UNIT – II

- 4 (a) Distinguish between addition and condensation polymerization 5M
- (b) Explain the mechanism of free radical polymerization 7M

OR

- 5 (a) Write the preparation and uses of i) TEFLON ii) Nylon 6,6 6M
- (b) Explain Langmuir adsorption isotherm 6M

UNIT – III

- 6 (a) Define calorific value of a fuel. Explain the determination of calorific value of solid fuel by Bomb calorimeter with neat labeled diagram 8M
- (b) Explain proximate analysis of coal 4M

OR

- 7 (a) Explain Otto-Hoffman by product method for carbonization of coal 6M
- (b) Explain the construction and working of Lead-Acid storage battery 6M

UNIT – IV

- 8 (a) Explain briefly i) Refractoriness ii) Refractoriness 8M
- (b) Explain briefly about polymer matrix composites 4M

OR

- 9 (a) Define abrasives. Explain the types of abrasives with examples 5M
- (b) Define lubricants. Explain the mechanism of lubrication 7M