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## I/IV B.Tech (Regular) DEGREE EXAMINATION

DECEMBER, 2018

Computer Science and Engineering

First Semester

Engineering Chemistry

Time: Three Hours

Maximum : 50 Marks

Answer Question No.1 compulsorily.

(1X10 = 10 Marks)

Answer ONE question from each unit.

(4X10=40 Marks)

(1X10=10 Marks)

1. Answer all questions

- What is meant by coagulation?
- Define foaming.
- What is meant by Calgon conditioning?
- What is pitting corrosion?
- What is "Pilling-Bedworth rule"?
- Define Anti knocking agent. Give an example
- Define Higher calorific value of fuel.
- Write the main constituents of LPG.
- Define Elimination reactions?
- Write any two applications of Bakelite?

## UNIT – I

- Define Hardness of water. Discuss the estimation of hardness of water by EDTA method. 6M
- Calculate temporary hardness and permanent hardness of water sample containing  $\text{Mg}(\text{HCO}_3)_2 = 7.3 \text{ mg/L}$ ,  $\text{Ca}(\text{HCO}_3)_2 = 16.2 \text{ mg/L}$ ,  $\text{MgCl}_2 = 9.5 \text{ mg/L}$ ,  $\text{CaSO}_4 = 13.6 \text{ mg/L}$ . 4M

(OR)

- Explain Ion exchange process for the softening of water. 6M
- Explain the method of treatment of brackish water by Reverse Osmosis 4M

## UNIT – II

- Derive Nernst equation for single electrode potential. 4M
- Explain i). Galvanic Corrosion ii). Differential aeration corrosion 6M

(OR)

- Explain how corrosion of a material is controlled by Cathodic protection method. 6M
- Write short note on Electroplating of Gold. 4M

## UNIT – III

- Discuss the determination of calorific value of solid fuel by Bomb calorimeter. 7M
- Write short note on cetane number 3M

(OR)

- Write short note on refining of crude petroleum. Write various fractions obtained from petroleum. 7M
- What are Bio Fuels? Write any two advantages of Bio diesel. 3M

## UNIT – IV

- Explain with mechanism the "Markownikoff's and Anti-Markownikoff's rule" 6M
- Explain a method of synthesis of "Paracetamol" 4M

(OR)

- Distinguish between Thermoplastic and Thermosetting polymers 6M
- Explain the preparation, properties and applications of PVC 4M