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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 hardness of water?
- Define priming.
- What is meant by phosphate conditioning?
- What is galvanic corrosion?
- What is "Pilling-Bedworth rule"?
- Define Octane number.
- Define lower calorific value of fuel.
- Write the composition of Petrol.
- Define addition reactions?
- Write any two applications of Poly Hydroxy Buterate (PHB).

UNIT – I

2.a Define Alkalinity of water. Discuss the estimation of alkalinity of water. 6M

2.b 100 mL of water sample on titration with N/50 H₂SO₄ required 8.0 mL of the acid to phenolphthalein end point and 9 mL of the same acid to methyl orange end point. Determine the type and amount of alkalinity present in water sample. 4M

(OR)

3.a Explain the following 6M

- Sludge
- Caustic embrittlement

3.b Explain the method of treatment of brackish water by Electrodialysis 4M

UNIT – II

4.a Derive Nernst equation for single electrode potential. 4M

4.b What is electrochemical corrosion? Describe the mechanism of electrochemical corrosion by evolution of hydrogen type and absorption of oxygen type. 6M

(OR)

5.a Explain various factors affecting corrosion rate of a metal. 6M

5.b Write short note on Electro plating of Gold. 4M

UNIT – III

6.a Discuss the determination of calorific value of solid fuel by Bomb calorimeter. 7M

6.b Write short note on knocking and antiknocking agents. 3M

(OR)

7.a What is meant by Flue gas? Explain the method of analysis of flue gas by Orsat apparatus. 7M

7.b What is LPG? What are the advantages of LPG over other gaseous fuels 3M

UNIT – IV

8.a Explain briefly the various classes of conducting polymers. 7M

8.b Explain a method of synthesis of "Aspirin" 3M

(OR)

9.a Distinguish between Thermoplastic and Thermosetting polymers 6M

9.b Explain the preparation and applications of Bakelite 4M