2E3202

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B. Tech. II - Sem. (Main / Back) Exam., - 2024

2FY2-03 Engineering Chemistry

Time: 3 Hours **Maximum Marks: 70**

Instructions to Candidates:

Attempt all ten questions from Part A, five questions out of seven questions from Part B and three questions out of five questions from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL 2. NIL

PART – A

[10×2=20]

(Answer should be given up to 25 words only)

All questions are compulsory

Q.1 What is hardness of water? [2]

Q.2 Write down the relationship between various units of hardness. [2]

Q.3 What is Calorific value of fuel? [2]

Q.4 What is Calgon conditioning? [2

Q.5 What is galvanization? [2

Q.6 Role of gypsum in cement. [

Q.7 Properties of good quality glass. [

Q.8 What is Octane number? [

Q.9 What is fire and flash points of lubricants? [

Q.10 Write down chemical reaction for the preparation of Aspirin. [

PART – B

[5×4=20]

(Analytical/Problem solving questions)

Attempt any five questions

Q.1 Discuss EDTA method for the determination of temporary, permanent and total hardness of water. [4]

Q.2 What is foaming in boilers? How the formation of foaming is prevented and discuss the impact of foaming on boilers. [1+3=4]

Q.3 What is Coke? Describe the manufacturing of coke by Otto-Hoffmann's method. [1+3=4]

Q.4 Differentiate between solid, liquid and gaseous fuel. [4]

Q.5 What is galvanic corrosion? Explain galvanic corrosion by suitable example. [1+3=4]

Q.6 Discuss the property of setting and hardening of cement. [4]

Q.7 Discuss the determination of viscosity by Redwood viscometer No.1 with diagram. [4]

PART – C

[3×10=30]

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any three questions

Q.1 What is softening of water? Describe softening of water by zeolite process with diagram. [3+7=10]

Q.2 Describe determination of Calorific value of gaseous fuel by Junker's Calorimeter. [10]

Q.3 What is dry corrosion? Discuss Pilling Bedworth's rule for dry corrosion. [4+6=10]

Q.4 Draw labelled diagram of Rotatory Kiln and describe the manufacturing process of cement. [3+7=10]

Q.5 What is paracetamol drug? Discuss manufacturing process, properties and uses of paracetamol. [2+8=10]
