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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech I Year II Semester Supplementary Examinations July-2021

ENGINEERING CHEMISTRY

(Common to CE, ME & AGE)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- 1 a What is EDTA? Explain the determination of hardness using EDTA method. 10M
b What are the units to express hardness of water? 2M

OR

- 2 a Write short notes on priming and foaming? 6M
b Explain the term reverse osmosis. How can it be used to obtain fresh water from sea water? 6M

UNIT-II

- 3 Explain in detail the various factors affecting corrosion. 12M

OR

- 4 a What are secondary cells? Explain the construction and working of Lithium Ion battery. 6M
b What is a fuel cell? Explain the underlying principle taking the example of an H₂-O₂ fuel cell. 6M

UNIT-III

- 5 a Define fuel. What are the different types of fuels and how are they classified? 6M
b Calculate the gross and net calorific values of coal having the following composition, Carbon = 85%, Hydrogen = 8%, Sulphur = 1%, nitrogen = 2% Ash = 4%, Latent heat of steam = 587 Cal/gm. 6M

OR

- 6 Write the preparation, properties and uses of the following
i. Buna-S rubber
ii. Buna-N rubber
iii. Thiokol rubber. 12M

UNIT-IV

- 7 a What do you mean by setting and hardening of Portland cement? Discuss the various reactions involved with the help of equations. 6M
b Write a note on Fiber reinforced composite materials. 6M

OR

- 8 How does lubrication occur by hydrodynamic and boundary lubrication? Distinguish between thick and thin film lubrication. 12M

UNIT-V

- 9 a What is the significance of the adsorption isotherm? 6M
b What are the factors influencing Adsorption of gases on solids? 6M

OR

- 10 Explain principle, instrumentation and applications of Scanning Electron microscopy (SEM). 12M

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