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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech I Year I Semester Supplementary Examinations July-2022****ENGINEERING CHEMISTRY**

(Common to ECE, CSE, CSIT)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)**UNIT-I**

- 1 a Discuss the working principle of Ni-Cd batteries. **6M**  
b Define fuel cell. Explain the construction and uses of Hydrogen-Oxygen fuel cell. **6M**

**OR**

- 2 a Explain the mechanism of Dry Corrosion. **6M**  
b Describe how electro-less plating of copper is carried out. Mention its advantages. **6M**

**UNIT-II**

- 3 a Describe the Zeolite process for softening of water. **8M**  
b Differentiate between scale and sludge. **4M**

**OR**

- 4 What is the principle of EDTA method? Describe the estimation of hardness by EDTA method. **12M**

**UNIT-III**

- 5 a Illustrate how synthetic petrol is manufactured through fischer-tropsch method. **8M**  
b Give the criteria for selecting good fuel. **4M**

**OR**

- 6 a Discuss the mechanism of different types of lubrication. **8M**  
b What is flash and fire point? Explain their significance. **4M**

**UNIT-IV**

- 7 a Give the differences between thermoplastic and thermosetting resins with examples. **6M**  
b Write preparation, properties and engineering applications of Bakelite. **6M**

**OR**

- 8 a Discuss the mechanism of free radical addition polymerization with suitable example. **7M**  
b Explain the procedures used in the processing of natural rubber. **5M**

**UNIT-V**

- 9 What do you mean by setting and hardening of cement? Discuss the various steps involved with the help of chemical equations. **12M**

**OR**

- 10 a Write a short note on properties of carbon nano tubes and Fullerenes. **6M**  
b write different applications of quantum dots. **6M**

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