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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech I Year I Semester Supplementary Examinations November-2020****APPLIED CHEMISTRY**

(Common to EEE &amp; ECE)

Time: 3 hours

Max. Marks: 60

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

**UNIT-I**

- 1 a Write a note on Potentio-metric Titrations (Redox Titrations) 6M  
 b What is primary Battery? Write a brief note on Zinc-Air battery. 6M

**OR**

- 2 a What is primary Battery? Write a brief note on Zinc-Air battery. 6M  
 b Explain the construction and working procedure of Hydrogen-Oxygen fuel cell. 6M

**UNIT-II**

- 3 a Derive Schrodinger wave equation? 8M  
 b Explain the band theory of solids. 4M

**OR**

- 4 a Write the postulates of molecular orbital theory. 6M  
 b What is Crystal field theory? Explain the crystal field splitting in octahedral complexes. 6M

**UNIT-III**

- 5 a Explain the mechanism free radical addition polymerization with examples. 6M  
 b Distinguish between Thermoplastics and thermosetting plastics. 6M

**OR**

- 6 a Describe the preparation, properties and uses of Nylon-6, 6. 5M  
 b Describe the preparation, properties and uses of Carbon Fibers. 7M

**UNIT-IV**

- 7 a Explain the principle and instrumentation of Gas Chromatography. 8M  
 b What are the applications of Gas Chromatography? 4M

**OR**

- 8 a Give an account on principle and instrumentation of IR spectroscopy. 6M  
 b Write a note on Potentiometry. 6M

**UNIT-V**

- 9 a What are the Properties of Nano-materials? 6M  
 b Define Dielectrics? What are the characteristics of Electrical Insulators? 6M

**OR**

- 10 a What are the classifications of Insulating material and their applications? 6M  
 b Write a note on Liquid Insulating Materials. 6M

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