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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B Tech I Year I Semester Supplementary Examinations Feb-2021

APPLIED CHEMISTRY

(Common to EEE & ECE)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

- 1 a What is a Fuel cell? Describe the Construction and Working of Methanol – Oxygen Fuel cell. 7M
- b Write a note on Lithium Ion rechargeable cell. 5M

OR

- 2 a Write a brief note on potentiometric sensor. 8M
- b Calculate the single electrode potential of zinc in 0.05M ZnSO₄ solution at 25 °C. 4M
E₀ Zn/Zn²⁺ = 0.763V.

UNIT-II

- 3 a Explain the band theory of solids. 4M
- b What is doping? Explain the role of doping on band structures. 8M

OR

- 4 a What is Crystal field theory? Explain the crystal field splitting in octahedral complexes. 7M
- b Write the postulates of molecular orbital theory. 5M

UNIT-III

- 5 a Explain the mechanism of 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 Bakelite. 6M
- b Write the preparation, properties and uses of Phenol-Formaldehyde resin. 6M

UNIT-IV

- 7 a Explain the principle and instrumentation of Gas Chromatography. 7M
- b Write a note on Potentiometry. 5M

OR

- 8 a Give an account on principle and instrumentation of IR spectroscopy. 8M
- b What are the applications of IR spectroscopy? 4M

UNIT-V

- 9 a Define Dielectrics? What are the characteristics of Electrical Insulators? 6M
- b Write an account on Carbon Nano Tubes. 6M

OR

- 10 a Classification of Insulating material and their applications. 6M
- b Write the Properties of Nano-materials. 6M

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