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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech I Year II Semester Regular Examinations November-2021

APPLIED CHEMISTRY

(Common to CSE, CSIT, CSE (AI & ML) & CSE (IoT & CS Including BCT))

Time: 3 hours

Max. Marks: 60

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

UNIT-I

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|---|--|-------|
| 1 | a What is Electrochemical cell? Give an example. | L1 4M |
| | b Write a short note on Hydrogen-Oxygen fuel cell. | L2 4M |
| | c Write a note on Lithium Ion rechargeable cell. | L2 4M |

OR

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|---|--|-------|
| 2 | a What is secondary Battery? Explain the Construction and working of Lead acid battery. | L3 6M |
| | b What is a Fuel cell? Describe the Construction and Working of Methanol – Oxygen Fuel cell. | L3 6M |

UNIT-II

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|---|--|-------|
| 3 | a Write De-Broglie's equation. | L1 6M |
| | b Explain pi- molecular orbital's of Butadiene with a neat sketch. | L3 6M |

OR

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|---|---|-------|
| 4 | a Why is it impossible to determine accurately both position and velocity of an electron at any instance? | L4 4M |
| | b Construct the molecular orbital energy level diagram of H ₂ , H ₂ ⁺ | L3 8M |

UNIT-III

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|---|--|-------|
| 5 | a What is functionality of monomer? | L1 6M |
| | b Explain the mechanism of cationic addition polymerization. | L3 6M |

OR

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| 6 | a Explain the mechanism of Ziegler-Natta polymerization. | L3 6M |
| | b Write the preparation, properties and uses of Phenol-Formaldehyde resin. | L2 6M |

UNIT-IV

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|---|--|-------|
| 7 | a Write a short note on Beer-Lambert's Law. | L1 6M |
| | b Distinguish between gas chromatography and High Performance Liquid Chromatography. | L3 6M |

OR

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|---|---|-------|
| 8 | a Explain the main components of gas chromatography. | L2 6M |
| | b Define the main parts of a High Performance Liquid Chromatography (HPLC). | L2 6M |

UNIT-V

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|---|---|-------|
| 9 | a Write the Properties of Nanomaterials. | L1 6M |
| | b What is doping? Explain the role of doping on band structure. | L2 6M |

OR

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| 10 | a Write an account on Carbon Nano Tubes. | L1 6M |
| | b Classification of Insulating material and their applications. | L2 6M |

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