

Code No: **R201115**

R20

SET - 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
I B. Tech I Semester Supplementary Examinations June 2025

APPLIED CHEMISTRY

(Common to ECE, AI&DS, AI&ML, CSE, CSE(AI&DS), CSE(AI&ML), CSE(AI) & CSE(DS))

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions. **ONE** Question from **Each unit**

All Questions Carry Equal Marks

UNIT-I

1. a) Discuss any two fabrication methods with neat sketch. [7M]
b) Illustrate the classification and properties of conducting polymers. [7M]
(OR)
2. a) Explain preparation, properties and applications of Buna-S. [7M]
b) Discuss methods of polymerization. [7M]

UNIT-II

3. a) Explain construction and working of calomel electrode. [7M]
b) Discuss Zn-air and Li ion battery. [7M]
(OR)
4. a) Explain galvanic corrosion and stress corrosion. [7M]
b) Illustrate the methods of cathodic protection. [7M]

UNIT-III

5. a) Discuss any two methods of preparation of semiconductors. [7M]
b) Explain Hall effect and its applications. [7M]
(OR)
6. a) Discuss the types of superconductors. [7M]
b) Explain the preparation of nanomaterials by sol-gel method. [7M]

UNIT-IV

7. a) Discuss electromagnetic spectrum. [7M]
b) Explain stretching frequencies of different functional groups in IR. [7M]
(OR)
8. a) Illustrate principle and instrumentation of Uv-Visible spectroscopy. [7M]
b) Discuss the working of ocean thermal energy with neat sketch. [7M]

UNIT-V

9. a) Explain molecular modeling methods. [7M]
b) Illustrate the role of computational chemistry. [7M]
(OR)
10. a) Explain how Rotaxanes and Catenanes as artificial molecular machines. [7M]
b) Discuss characteristics of molecular motors and machines. [7M]
