



ADITYA UNIVERSITY

B.Tech – I Semester End Examinations Supplementary – Dec 2025

APPLIED CHEMISTRY (Common CSE & AIML)

Time: 3 hours**Max. Marks: 100****Answer ONE question from each unit****All Questions Carry Equal Marks****All parts of the questions must be answered at one place only****UNIT-I**

- 1 a Define polymer? Explain the properties of the polymers? L1 CO1 [10M]
b Write the preparation and the properties of Bakelite? L2 CO1 [10M]

(OR)

- 2 a Describe the synthesis and degradation of polyglycolic acid (PGA)? L1 CO1 [10M]
b Distinguish between thermo plastics and thermosetting polymers? L1 CO1 [10M]

UNIT-II

- 3 a Differentiate Primary and Secondary cells. Explain working of Electrochemical cell? L2 CO2 [10M]
b What is the working principle of Fuel-Cell? Describe H₂-O₂ fuel cell? L1 CO2 [10M]

(OR)

- 4 a Derive the Nernst equation for a cell potential and explain its applications? L2 CO2 [10M]
b Explain the working principle of amperometric sensors with examples? L2 CO2 [10M]

UNIT-III

- 5 a What is Computational Chemistry? Discuss the applications of Computational Chemistry? L2 CO3 [10M]
b Write a note on applications of computational quantum chemistry? L1 CO3 [10M]

(OR)

- 6 a Describe the tools and solution analysis of molecular modelling? L2 CO3 [10M]
b What is conformational sampling? Discuss techniques used for conformational samples? L2 CO3 [10M]

UNIT-IV

- 7 a Write the preparation and applications of fullerenes? L1 CO4 [10M]
b Explain sol-gel synthesis for producing nanomaterials? L2 CO4 [10M]

(OR)

- 8 a Write the preparation and applications of carbon nanotubes? L1 CO4 [10M]
b Explain the principle of SEM in the characterization of nanomaterials? L2 CO4 [10M]

UNIT-V

- 9 a Explain the desalination of water by reverse osmosis method? L2 CO5 [10M]
b Discuss the sources and need for e-waste management? L2 CO5 [10M]

(OR)

- 10 a Explain the Zeolite Process of water softening with neat diagram? L2 CO5 [10M]
b Describe the process of extracting copper from e-waste? L2 CO5 [10M]
