BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - II Computer Science & Engineering AI & ML : WINTER: 2025
SUBJECT: ORGANIC & ELECTROCHEMISTRY

Day : Wednesday | Time : 10:00 AM-01:00 PM
Date : 26/11/2025 | **W-23931-2025** | Max. Marks : 60

N.B.
1) All questions are **COMPULSORY**.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Assume suitable data, if necessary.
4) Draw neat and labeled diagrams, **wherever** necessary.

Q.1 Explain on the basis of molecular orbital theory, why – **(10)**

i) O_2 molecule is paramagnetic and N_2 molecule is diamagnetic.

ii) Hydrogen forms diatomic molecule while Helium remains monoatomic.

OR

Q.1 Explain the following terms with examples: **(10)**

i) central metal atom and ligands

ii) coordination number and coordination sphere

Q.2 Write a short note on : **(10)**

i) Atom economy

ii) Supercritical CO_2

OR

Q.2 Define green chemistry. Explain the "use of renewable feedstock" principle in green chemistry with example. **(10)**

Q.3 What is secondary cell? Explain in detail the Lead-acid storage battery. **(10)**

OR

Q.3 Draw a neat labelled diagram of Daniel cell. Write the redox chemical reactions taking place in the cell. **(10)**

Q.4 Write a note on conducting polymers. **(10)**

OR

Q.4 Define monomer. Explain condensation polymerization with example. **(10)**

Q.5 Define semiconductor. Differentiate between n-type and p-type extrinsic semiconductors. **(10)**

OR

Q.5 Explain the types, properties and applications of superconductors. **(10)**

Q.6 Explain the proximate analysis of coal. **(10)**

OR

Q.6 Define calorific value of a fuel. Explain the types of calorific value of a fuel. **(10)**

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