

BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - II Computer Science & Engineering-AI & ML : WINTER : 2024
SUBJECT: ORGANIC & ELECTROCHEMISTRY

Day : Monday
Date : 25/11/2024

W-23931-2024

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat labelled diagrams **WHEREVER** necessary.
- 4) Use of non-programmable **CALCULATOR** is allowed.
- 5) Assume suitable data if necessary.

Q.1 Define molecular orbital. Explain the paramagnetic nature of O₂ molecule on the basis of molecular orbital theory. (10)

OR

Q.1 Define bond order. Explain the stability of molecule on the basis of value of bond order. Give the relationship between bond order and bond length. (10)

Q.2 What is green chemistry? Explain in detail the concept of atom economy. (10)

OR

Q.2 Write in detail about Green Solvents. (10)

Q.3 Differentiate between electrochemical cell and electrolytic cell. (10)

OR

Q.3 What is reserve battery? Explain the construction and working of H₂-O₂ fuel cell. Give the advantages of fuel-cell. (10)

Q.4 What is addition polymerization? Explain the formation of polyethylene from ethylene. (10)

OR

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

Q.5 Define semiconductor. Explain the electrical conductivity in n-type and p-type semiconductors. (10)

OR

Q.5 What are Superconductors? Explain the properties and applications of superconductors. (10)

Q.6 How fuels are classified? Explain the characteristic properties of a good fuel. (10)

OR

Q.6 What is ultimate analysis of a coal? Explain the determination of nitrogen in coal in ultimate analysis. (10)

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