

BACHELOR OF TECHNOLOGY (CBCS - 2023)
B. Tech. Sem-II COMPUTER SCIENCE & ENGINEERING-A&M : SUMMER : 2024
SUBJECT: ORGANIC & ELECTRO CHEMISTRY

Day : Friday
Date : 24/05/2024

S-27701-2024

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 What is magnetic property of oxygen molecule? Explain its magnetic property on the basis of molecular orbital theory. (10)

OR

Q.1 Write a short note on: (10)
i) Central metal atom and ligands
ii) Coordination number and coordination sphere

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

Q.2 Define the term green solvent. What is Supercritical CO₂? Give four applications of supercritical CO₂ as a green solvent. (10)

Q.3 Define electrochemical cell. Explain the construction and working of Daniel cell with diagram and redox chemical reactions. (10)

OR

Q.3 Derive the Nernst equation for the calculation of cell emf of following galvanic cell (10)
 $-Zn | ZnSO_4 (1M) || CuSO_4 (1M) | Cu \oplus$
(s) (aq) (aq) (s)

Q.4 Define polymer. Explain the condensation polymerization with suitable example. (10)

OR

Q.4 What is polymerization? Compare between addition polymerization and condensation polymerization. (10)

Q.5 Define semiconductor. Explain n-type and p-type semiconductors. (10)

OR

Q.5 Write a note on Superconductors. (10)

Q.6 Define lubricants. Discuss the classification of lubricants with suitable examples. (10)

OR

Q.6 Why is coal analysis required? Explain how the different factors are determined in proximate analysis of coal. Give its significance. (10)

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