

BACHELOR OF TECHNOLOGY (CBCS - 2023)
B. Tech. Sem-II Computer Science & Engineering AI & ML : WINTER : 2024
SUBJECT: ORGANIC & ELECTRO CHEMISTRY

Day : Saturday
Date : 07/12/2024

W-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 Define bond order. Explain the non-existence of Helium molecule on the basis of molecular orbital theory. (10)

OR

Q.1 What is outcome of constructive interaction and destructive interaction of atomic orbitals of combining atoms? Explain both the interactions in detail. (10)

Q.2 What is green chemistry? Explain "prevention of waste generation" principle in green chemistry with example. (10)

Q.2 Explain conventional and green route of synthesis of Adipic acid. Highlight the green chemistry principle involved. (10)

Q.3 What is a storage cell? Describe the construction and working of Lead-acid battery with the reactions occurring during discharge. (10)

OR

Q.3 Define the terms: (10)

i) Electrochemical cell	ii) emf of cell
iii) Electrode potential	iv) Oxidation potential
v) Reduction potential	

Q.4 What is polymerization? Explain in detail the addition polymerization with suitable example. (10)

OR

Q.4 What are conducting polymers? Explain different types of conducting polymers with examples. (10)

Q.5 What are intrinsic semiconductors? Explain electrical conductivity in n-type and p-type semiconductors. (10)

OR

Q.5 Explain in detail the electrical conductivity of solids based on a band gap theory. (10)

Q.6 Define lubrication. Explain the mechanism of fluid-film and boundary lubrication with examples. (10)

OR

Q.6 What is importance of ultimate analysis of coal? Explain the determination of carbon and hydrogen in coal with diagram and give its significance. (10)

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