

ANURAG Engineering College

(An Autonomous Institution)

I B.Tech I Semester Regular/Supplementary Examinations, Jan/Feb-2024

ENGINEERING CHEMISTRY**(COMMON TO CSE & AIML)****Time: 3 Hours****Max. Marks: 60****Section – A (Short Answer type questions)****(10 X 1M = 10M)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. Define Hardness & Defluoridation.	CO1	L1	1M
2. Explain Reverse-Osmosis process.	CO1	L2	1M
3. Compare battery & fuel cell.	CO2	L2	1M
4. Define corrosion & mention its causes.	CO2	L1	1M
5. Write preparation & two properties of PVC.	CO3	L2	1M
6. Define bio-degradable polymer & mention one example.	CO3	L1	1M
7. Differentiate atomic & molecular orbitals?	CO4	L2	1M
8. Interpret t _{2g} & e _g orbitals?	CO4	L2	1M
9. Write about shape memory materials.	CO5	L2	1M
10. List the characteristics of good Lubricant.	CO5	L1	1M

Section B (Essay Questions)**Answer all questions, each question carries equal marks.****(5 X 10M = 50M)**

11. A) Determine the hardness of water sample by complexometric method using EDTA.	CO1	L3	10M
OR			
B) Briefly explain about scales & sludge formation in boilers.	CO1	L3	10M
12. A) Sketch Li-ion battery and explain its working & its applications to electric vehicles.	CO2	L3	10M
OR			
B) Apply Cathodic protection method to control corrosion.	CO2	L3	10M
13. A) Distinguish addition & condensation polymerization with appropriate examples.	CO3	L3	10M
OR			
B) Explain why rubber is vulcanized & write the preparation, properties and applications of Thiokol Rubber & Butyl rubber.	CO3	L3	10M
14. A) Predict the bond order & magnetic properties of N ₂ and F ₂ molecules using molecular orbital diagrams.	CO4	L3	10M
OR			
B) Explain the crystal field splitting pattern in octahedral and tetrahedral and complexes.	CO4	L3	10M
15. A) Give an account of setting & hardening of cement.	CO5	L3	10M
OR			
B) Explain the mechanism of lubrication with examples.	CO5	L2	10M