

ANURAG Engineering College

(An Autonomous Institution)

I B.Tech I Semester Regular/Supplementary Examinations, January-2025

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

	Course Outcome	B.T Level	Marks
1. Define Potable water.	CO1	L1	1M
2. Define Temporary hardness of water.	CO1	L1	1M
3. Illustrate the term corrosion with an example.	CO2	L2	1M
4. Explain the principle of fuel cell.	CO2	L2	1M
5. Identify the monomers of the elastomer BUNA-S?	CO3	L2	1M
6. Outline the synthesis of Terylene.	CO3	L2	1M
7. Define molecular orbitals.	CO4	L1	1M
8. Discuss bond order in N ₂ molecule.	CO4	L2	1M
9. Illustrate the flash point of lubricants	CO5	L2	1M
10. Give an example of memory thermo responsive polymers.	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) Outline how ion-exchangers help in water treatment using examples of cationic and anionic ion – exchangers.	CO1	L2	10M
12. A) Define a secondary cell and discuss the Lithium-ion battery with cell reactions. List out the applications Li-ion battery to electrical vehicles.	CO2	L3	10M
OR			
B) Interpret the factors affecting rate of corrosion.	CO2	L3	10M
13. A) Discuss preparation, properties and engineering applications of Bakelite.	CO3	L3	10M
OR			
B) What is natural rubber? Explain the process of vulcanization of rubber with chemical reactions.	CO3	L2	10M
14. A) Discuss the crystal field splitting of d-orbitals in an octahedral complex.	CO4	L2	10M
OR			
B) i) Based on Molecular orbital theory explain LCAO. ii) On the basis of MOT Explain molecular orbital energy level diagram of O ₂ .	CO4	L2	5M 5M
15. A) Describe the process of manufacturing Portland cement with a neat diagram.	CO5	L2	10M
OR			
B) Define Lubricants. Extend a note on the mechanism of lubricants with examples.	CO5	L2	10M