R20 Regulation *Subject code:3B1AN*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B. Tech I Semester Supplementary Examinations, January 2026

CHEMISTRY

(Common to CSE, IT, CSE(AI&ML) & CSE(DS))

Maximum Marks: 70 Date: 09.01.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

	Part-A			
All the following questions carry equal marks	(10X2M=20 Marks)	Marks	CO	BTL
1	What is the magnetic nature of N2 molecule?	2M	1	L1
2	What is doping?	2M	1	L1
3	What is meant by hardness of water?	2M	2	L1
4	What is calgon conditioning?	2M	2	L1
5	What is electrochemical series write any two applications	2M	3	L1
6	What is EMF and its units?	2M	3	L1
7	What are enantiomers? write one example	2M	4	L1
8	What is Markonikov's rule?	2M	4	L1
9	What are the applications of UV-visible Spectroscopy?	2M	5	L1
10	Define Auxochrome and Chromophore.p	2M	5	L1
	Part-B			
Answer All the following questions.	(5X10M=50Marks)	Marks	CO	BTL
11	Construct the pi- molecular orbital energy level -diagram of 1,3-Butadiene	10M	1	L2
	OR			
12	Explain the effect of doping in semiconductors?	10M	1	L2
13	Explain the ion -exchange process in thesoftening of water?	10M	2	L2
	OR			
14	Explain the estimation of hardness of water byusing EDTA method?	10M	2	L2
15	a) Explain the construction and working of a calomel electrode? b) Explain the working and applications of H_2-O_2 fuel cell?.	5M 5M	3	L2
	OR			
16	What are fuel cells? Explain the working and applications Lithium Ion battery.	10M	3	L2

17	Explain the mechanism of SN1 and SN2Reactions.	10M	4	L2
	OR			
18	a) Explain the conformational analysis of n-Butane. b) Explain the Synthesis of Aspirin and Mention the therapeutic applications.	5M 5M	4	L2
19	Explain about the Transitions involved in UV spectroscopy.	10M	5	L2
	OR			
20	a) Explain i) IR & ii) Types of molecular vibrations b) Write a note on MRI.	5M 5M	5	L2