R20 Regulation *Subject code:3B1AG*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B. Tech I Semester Supplementary Examinations, January 2026

ENGINEERING CHEMISTRY

(EEE)

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 N_2 molecule?	2M	1	L1
2	What is the bond order of O_2 molecule?	2M	1	L1
3	Define hardness of water and mention its causes.	2M	2	L1
4	What is Colloidal conditioning of Water?	2M	2	L1
5	Define standard electrode potential& Single electrode potential.	2M	3	L1
6	Define Bateries.	2M	3	L1
7	Define electrode potential.	2M	4	L1
8	Define wet corrosion.	2M	4	L1
9	What is knocking?	2M	5	L1
10	What is the cetane number of diesel fuel?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Write about postulates of MOT and Construct the molecular orbital energy level diagram of F_2 molecules?	10M	1	L2
	OR			
12	Explain the effect of doping in semiconductors.	10M	1	L2
13	Describe the estimation of hardness of water by EDTA method.	10M	2	L2
	OR			
14	Outline various steps involved in the treatment of potable water.	10M	2	L2
15	a) Explain the construction and working of the calomel electrode. b) What is electro chemical series? Write its significance and applications?	5M 5M	3	L2
	OR			
16	a) Explain the construction and working of lithium-ion batteries. b) Explain about H_2-O_2 fuel cells.	5M 5M	3	L2

17	a) Write a note on cathodic protection. b) Explain the factors effecting rate of corrosion.	5M 5M	4	L2
	OR			
18	Explain the Galvanic Corrosion.	10M	4	L2
19	Explain about the Proximate Analysis of a Coal.	10M	5	L2
	OR			
20	Explain about the Fischer Tropsch Synthesis method for the Preparation of Synthatic petrol.	10M	5	L2

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