Regulation R20 *Subject code: 3B2AM*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech II Semester Supplementary Examinations, January 2024

Applied Chemistry

(ECE)

Maximum Marks: 70 *Date:23.01.2023* Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 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)		CO	Bloom Tx
1	What is the bond order in 'O_2'molecule?	CO1	Level 2
2	Write any two differences between bonding and anti-bonding molecular orbitals?	CO1	Level 1
3	How can you remove temporary hardness?	CO2	Level 4
4	What is reverse osmosis?	CO2	Level 4
5	Define standard electrode potential& Single electrode potential?	CO3	Level 2
6	What are the Electrodes used in Li- ion Batteries?	CO3	Level 1
7	Write Ilkovic equation?	CO3	Level 1
8	Define Limiting current?	CO3	Level 3
9	Define Beer –Lambert's law?	CO5	Level 3
10	Write the applications of UV-visible spectroscopy?	CO5	Level 4

Part-B

Answer All the following questions. (10M X 5=50Marks)			
11	Explain molecular orbital diagram for 1, 3-butadiene. [10M]	CO1	Level 2
	OR		
12	A. Write about band theory of solids. [5M] B. Explain the crystal field splitting in tetrahedral metal complexes. [5M]	CO1 CO1	Level 1 Level 4
13	What is the principle of EDTA titration? How the permanent hardness of water is determined using EDTA method. [10M]	CO4	Level 3
	OR		
14	A. Explain the treatment of potable water. [5M] B. Explain in detail about boiler corrosion. [5M]	CO4 CO4	Level 2
15	Derive Nernst equation for the potential of a single electrode? [10M]	CO3	Level 3
	OR		

16	A. Explain the construction and working of lithium-ion batteries. [5M] B. Explain about H_2-O_2 fuel cells. [5M]	CO3	Level 3
17	A. Write about types current in Polarography? [5M] B. Explain the principle involved instrumentation of Polarography. [5M]	CO3 CO3	Level 4 Level 3
	OR		
18	A. Explain Working of Dropping Mercury Electrode in polarography? [5M] B. Explain principle and working of Amperometry titrations. [5M]	CO3 CO3	Level 2 Level 3
19	A. Write a note on chemical shift? [5M] B. Explain the basic principle of NMR. [5M]	CO5 CO5	Level 4 Level 3
	OR		
20	A. Explain the principle of rotational spectra of diatomic molecules. [5M] B. Write the application IR spectroscopy? [5M]	CO5 CO5	Level 4 Level 3