



R18 Regulation *Subject code:2B2AC*
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech II Semester Supplementary Examinations, June 2024

ENGINEERING CHEMISTRY
(Common to CE,EEE,ME & IT)

Maximum Marks: 70

Date:28.06.2024 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 which carries 10M.
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 and magnetic property of 'CO' molecule?	1	L1
2	Define break point chlorination.	1	L1
3	How do you express hardness of water?	2	L1
4	Why we are using bleaching powder in potable water?	2	L1
5	What is the difference between primary and secondary battery?	3	L1
6	Write the mechanism of pitting corrosion.	3	L1
7	What is diastereomers?	4	L1
8	Write the pharmaceutical applications of paracetamol.	4	L1
9	Write any two applications of NMR.	5	L1
10	What is the selection rule in IR spectroscopy.	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)			
11	(a) Write the differences between atomic orbital and molecular orbital.[5M] (b) Construct molecular orbital energy level diagram of O ₂ molecule. [5M]	1	L2
OR			
12	(a) Write the postulates of molecular orbital theory. [5M] (b) Explain the crystal field splitting in tetrahedral metal complexes. [5M]	1	L2
13	Estimation of hardness of water by complexometric method. [10M]	2	L2
OR			
14	(a) Explain ion exchange process. [5M] (b) Write a note on boiler corrosion. [5M]	2	L2
15	(a) What is an electro chemical cell? Explain the construction and working With suitable example. [5M] (b) Explain about secondary batteries by taking suitable example. [5M]	3	L2
OR			

16	(a) Explain the factors effecting rate of corrosion. [5M] (b) Write a note on cathodic protection. [5M]	3	L2
17	(a) Write the differences between enantiomers and diasterometers . [5M] (b) Discuss the mechanism of SN ₂ reactions. [5M]	4	L2
	OR		
18	a) What is Markownikoff's rule? Explain giving example. [5M] (b) Write the Pinacol pinacolone rearrangement reaction. [5M]	4	L2
19	(a) Explain selection rules of electronic spectroscopy. [5M] (b) Explain application of MRI. [5M]	5	L2
	OR		
20	(a) Explain the theory involved in IR spectroscopy? And mention it's selection rules. [5M] (b) Write a note on chemical shift. [5M]	5	L2