



B. Tech I Semester Supplementary Examinations, January 2024

ENGINEERING CHEMISTRY
(EEE)

Maximum Marks: 70

Date: 22.01.2024 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.
 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=20Marks	Blooms Tx	CO
1.	Energy level diagram of O ₂		L1	CO1
2.	Crystal field splitting in tetrahedral complexes.		L1	CO1
3.	What is reverse osmosis?		L2	CO1
4.	Write the phosphate conditioning?		L2	CO2
5.	What is the significance of electro chemical series?		L1	CO2
6.	What are the disadvantages of corrosion?		L1	CO2
7.	Define Corrosion.		L1	CO4
8.	Write about classification of Corrosion.		L1	CO4
9.	Define Calorific value.		L1	CO3
10.	Write the examples of solid fuels?		L1	CO3

PART B

Answer all the following questions		5X10M=50Marks	Blooms Tx	CO
11.	(a) Explain the salient features of MOT theory. (b) Explain bond order and magnetic properties of (i) N ₂ (ii) F ₂ molecules with neat energy level diagrams. [5+5]		L2 L2	CO1 CO1
OR				
12.	(a) Explain crystal field splitting in strong field square planar complexes. (b) Write notes on LCAO. [5+5]		L2 L1	CO2 CO1
13.	(a) What is hardness of water? How hard water estimated by EDTA method? (b) Describe ion exchange method for treatment of water. [5+5]		L1 L3	CO2 CO2
OR				
14.	(a) What is meant by break point chlorination? Mention the advantages of breakpoint chlorination. (b) How the hardness of water expressed? What are various units employed? Write the reactions involved in boiling of water. [5+5]		L1 L1	CO2 CO2

15.	(a) How can you determine pH of unknown solution by using Quinone – hydroquinone electrode. (b) Describe the construction and working of a lithiumion battery. [5+5]	L1 L3	CO2 CO2
	OR		
16.	(a) Write a note on electro chemical corrosion by absorption of oxygen type mechanism? (b) Explain about cathodic protection. [5+5]	L2 L1	CO2 CO2
17.	Explain the factors affecting the rate of corrosion. [10]	L1	CO4
	OR		
18.	Write in details about Sacrificial anode and impressed current cathodic method. [5+5]	L1	CO4
19.	Write the coal analysis by proximate analysis and its significances. [10]	L2	CO3
	OR		
20	Write the composition and applications of CNG and LPG. [5+5]	L1	CO3