



R25 Regulation

Subject code:5BS1AB

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech I Semester Regular Examinations, January 2026

ENGINEERING CHEMISTRY
(Common to CE, EEE, ECE, CSE(DS) & IT)

Maximum Marks: 60

Date:21.01.2026

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 (5X2M=10Marks)		Marks	CO	BTL
1.a	What is temporary hardness? Give example.	2M	1	1
b	What is the cause of corrosion?	2M	2	1
c	What are secondary batteries? Give example	2M	3	2
d	Write the types of polymerization with examples	2M	4	2
e	Define Cloud point	2M	5	1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	a) 100 ml of a sample of water required 25 ml of 0.01 M EDTA for the titration using Eriochrome Black-T indicator. Calculate total hardness of water. b) Estimate the hardness of the water by EDTA method.	4M 6M	1	3
OR				
3	a) How caustic embrittlement occurs and gives the chemical reactions involved in it? b) Explain the desalination of water by Reverse Osmosis method.	5M 5M	1	2
4	a) Explain electrochemical corrosion and discuss the mechanism by taking suitable example. b) Explain sacrificial anodic method of corrosion control with a neat diagram and give its applications	5M 5M	2	2
OR				
5	a) Write the Nernst equation. b) Write the Construction, working and determination of pH of unknown solution using SHE.	3M 7M	2	2
6	a) Discuss lithium-ion battery. b) Explain in detail the classification of batteries and give suitable examples.	7M 3M	3	2

	OR			
7	a) Write short note on CNG and LPG give its applications. b) Explain in details about characteristics of good fuel.	6M 4M	3	2
8	What are conducting polymers? Explain.	10M	4	3
	OR			
9	a) Explain the difference between thermo-set and thermoplastic resins with example. b) Explain preparation and, properties and applications of the PVC.	6M 4M	4	2
10	a) Describe shape memory materials with examples and mention their applications. b) What is biosensor? Explain the principle and working of amperometry glucose monitoring sensor.	5M 5M	5	2
	OR			
11	a) Write the classification of lubricants with examples and mention the characteristics of good lubricants. b) Discuss the setting and hardening of Portland cement.	5M 5M	5	2