



R22 Regulation

Subject code:4B2AD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech II Semester Regular/Supplementary Examinations, July 2025

APPLIED CHEMISTRY

(Common to CE & EEE)

Maximum Marks: 60

Date:17.07.2025

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

Table with 5 columns: Question ID, Question Text, Marks, CO, BTL. Contains 10 questions (a-j) related to scale/sludge, hardness, battery, corrosion, polymers, HCV, natural gas, and Portland cement.

Part-B

Table with 5 columns: Question ID, Question Text, Marks, CO, BTL. Contains 5 questions (2-5) related to boiler feed water treatment, ion exchange, methanol fuel cell, and electrochemical corrosion.

	b) Explain sacrificial anodic cathodic protection with a neat diagram and its applications.	4M	2	L3
6	a) Differentiate addition and condensation polymerization. b) Write the properties, preparation & applications of Bakelite.	5M 5M	3 3	L3 L2
OR				
7	a) Explain the conductance mechanism of trans-poly acetylene. b) Discuss the preparation, properties and applications of Buna-S.	5M 5M	3 3	L3 L3
8	a) Describe the ultimate analysis of coal and its significance. b) Explain octane number and cetane number.	6M 4M	5 5	L2 L2
OR				
9	a) Explain the refining of petroleum with composition, boiling range and uses of various fractions. b) Write notes on Biodiesel.	7M 3M	5 5	L3 L2
10	a) Explain the setting hardening of cement with relevant chemical reactions involved in it. b) Write the characteristics of good lubricants.	6M 4M	4 4	L2 L1
OR				
11	a) Explain thick film lubrication mechanism with diagram. b) Discuss the classification of Refractory.	6M 4M	4 4	L2 L2