

CMR ENGINEERING COLLEGE: : HYDERABAD

UGC AUTONOMOUS

I-B.TECH-II-Semester End Examinations Regular) - June- 2025

ENGINEERING CHEMISTRY

(Common for ECE, CSD, CSM, IT, CSC)

[Time: 3 Hours]

[Max. Marks: 60]

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 10 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A**(10 Marks)**

1. a) What is Calgon conditioning? [1M]
- b) Define hardness water. [1M]
- c) Relate between HCV and LCV of a fuel. [1M]
- d) What is the significance of Cetane number? [1M]
- e) Illustrate applications (any two) of electrochemical series. [1M]
- f) What is a battery and write its classification. [1M]
- g) Explain pitting corrosion of metal. [1M]
- h) Define corrosion of metals. [1M]
- i) Explain why natural rubber needs vulcanization. [1M]
- j) Summarize various applications biodegradable polymers. [1M]

PART-B**(50 Marks)**

2. Explain the purification of water by Ion exchange process and give its advantages. [10M]
- OR**
3. Summarize a short note on the following [10M]
 - i) Phosphate conditioning ii) Caustic embrittlement iii) Ozonization
4. What is cracking? Discuss the Moving bed catalytic cracking method to obtain gasoline from heavy oils. [10M]
- OR**
5. Discuss the manufacture of gasoline by Fisher-Tropsch method. [10M]
6. Explain the construction and working of Lead acid battery. Write down the reactions taking place during charging and discharging. [10M]
- OR**
7. Explain the construction of Quinhydrone electrode and write determination of p^H using Quinhydrone electrode. [10M]
8. Write a short note on the following [10M]
 - i) Sacrificial anodic protection method ii) Galvanizing
- OR**
9. Explain the Electrochemical theory of wet corrosion, giving its mechanism. [10M]
10. Discuss the preparation, properties and applications of Bakelite and Teflon. [10M]
- OR**
11. Analyze the doping mechanism of conducting polymer (p-doping & n-doping). [10M]
