CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
I–B.TECH–II–Semester End Examinations (Supply) –June - 2025
ENGINEERING CHEMISTRY
(Common for CSE, IT, CSD, CSC)

[Time: 3 Hours]   **[Max. Marks: 70]**

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

Part A is compulsory which carries 20 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   (20 Marks)

1. a) Define hardness of water.   [2M]
   b) What is Calgon conditioning of water?   [2M]
   c) Calculate the bond order of F_2 molecule.   [2M]
   d) Define Doping and classify it.   [2M]
   e) What is cell potential (or) emf ?   [2M]
   f) Define primary cell & write the example of primary cell.   [2M]
   g) Define fuels with examples.   [2M]
   h) What is calorific value?   [2M]
   i) Write the monomers involved in the preparation of BuNa-S.   [2M]
   j) Write any two disadvantages of corrosion.   [2M]

PART-B   (50 Marks)

2. Describe the estimation of hardness of water by complexometric method.   [10M]

OR

3. Discuss the boiler troubles.
   a) Scale & Sludge.   [5M]
   b) Caustic Embrittlement.   [5M]

4. Write the postulates of molecular orbital theory and draw the energy level diagrams of O_2?   [10M]

OR

5. Explain crystal field splitting of d-orbitals in octahedral complexes.   [10M]

6. Explain the construction, working nature and applications of lead acid storage battery.   [10M]

OR

7. Write notes on Daniel cell or galvanic cell.   [10M]

8. What do you mean by refining of petroleum? List out the various fractions obtained during refining of crude oil with neat diagram.   [10M]

OR

9. Explain briefly determination of calorific value by Junker's gas calorimeter.   [10M]

10. Write a short note on.
    a) Addition polymerization.   [5M]
    b) Condensation polymerization with examples.   [5M]

OR

11. Write the mechanism of electro chemical corrosion.   [10M]

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