

Code No.: CH202BS

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CMR ENGINEERING COLLEGE:: HYDERABAD
UGC AUTONOMOUS
I-B.TECH-II-Semester End Examinations (Supply) - January- 2022
ENGINEERING CHEMISTRY
(Common to 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) Compare Temporary hardness from Permanent hardness. [2M]
- b) What is Break Point Chlorination? [2M]
- c) Define bond order? [2M]
- d) Outline the Molecular Orbital electronic configuration of F_2 molecule. [2M]
- e) Write Nernst Equation? [2M]
- f) How Primary Batteries differ from Secondary Battery? [2M]
- g) What is Knocking? How it can be avoided? [2M]
- h) Compare HCV and LCV? [2M]
- i) How are Conducting Polymers classified? [2M]
- j) Outline the factors affecting rate of Corrosion. [2M]

PART-B

(50 Marks)

2. Explain the Estimation of Hardness of Water by EDTA method. [10M]
OR
3. Illustrate the following [5M]
 - a) Caustic Embrittlement. [5M]
 - b) Reverse Osmosis.
4. a) Solve the Molecular Orbital Energy level diagram of O_2 Molecule and calculate Bond Order and Magnetic behavior. [7M]
b) Outline the concept of LCAO. [3 M]
OR
5. Illustrate the Crystal Field Splitting of d-orbitals in Tetrahedral complexes with a suitable example. [10M]
6. Define Electrochemical cell? Explain the construction and function of Daniel cell with a neat diagram. [10M]
OR
7. What is fuel cell? Construct the Hydrogen-Oxygen fuel cell and give it's applications. [10M]
8. a) Define a fuel? How fuels are classified? [3M]
b) Illustrate Proximate analysis of Coal and give it's significance. [7M]
OR
9. What is flue gas? Explain the analysis of flue gas by Orsat's apparatus. [10M]
10. a) Write the preparation properties and applications of Biodegradable polymers. [5M]
b) Compare Thermoplastic from Thermosetting resins. [5M]
OR
11. Define Corrosion? Explain the mechanism of Electrochemical Corrosion. [10M]
