R22 Regulation

Subject Code:4H1AH

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

Engineering Chemistry

(Common to CSE,CSE(AI&ML) and CSE(DS))

Maximum Marks: 60

Date:03.10.2023 **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 (10x1M=10 Marks)

1a What is the magnetic property in CO molecule?

b Define extrinsic semiconductors.

c Define Sludge and Scales. Write its effects.

d Define break point chlorination.

e Define Solar cell. Write their applications.

f Define Corrosion. Write any two causes of corrosion.

g Write composition of LPG ?

h Define knocking.

i Define a Polymer ?

j What are plastics? Give examples.

Part-B

Answer All the following questions. (10M X5=50Marks)

2 (a) Explain the molecular orbital energy leveldiagram for N2 molecule? 5M

(b) Construct the molecular orbital energy level diagram of O2 molecule? 5M

OR

3 Construct the pi-molecular orbital energy level diagram of 1,3-Butadiene? 10M

4 Outline various steps involved in the treatment of potable water. 10M

OR

5 What is desalination? Explain the reverse osmosis process. 10M

6 Define fuel cells. Explain the construction and working of Methanol -O_2 fuel cell. 10M

OR

7 Explain the mechanism of Electrochemical (wet) corrosion. 10M

8	Explain the preparation of Synthetic petrol by fischer –Tropsch Synthasis		10M
	OR		
9	a) Define cracking? Describe the moving bed catalytic cracking.		5M
	b) Explain the refining of petroleum?		5M
10	Explain the preparation, properties and engineering applications of Bakelite.		10M
	OR		
11	Write addition and condensation polymerization by taking one example for each.		10M