R20 Regulation *Subject code: 3B1AN*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech I Semester Supplementary Examinations, September 2023

Chemistry

(common to CSE,CSE(AI&ML),CSE(DS)& IT)

Maximum Marks: 70 **Date:03.10.2023** Duration: 3 hours

Note: 1.This question paper contains two parts A andB.
2. Part A is compulsory which carries 20 marks. Answer all questions in PartA.
3. Part B consists of 5 Units. Answer any one full question from eachunit.
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 (10x2M=20Marks)

1 What is the magnetic nature of N_2 molecule?

2 What is doping?

3 What is meant by hardness of water?

4 What is calgon conditioning?

5 Define single electrode potential ?

6 Defferentiate cell from battery ?

7 What are enantiomers ? write one example

8 What is meant by chirality ?

9 What are the applications of UV-visible Spectroscopy?

10 Define Auxochrme and Chromophore?

Part-B

Answer All the following questions. (5X10M=50Marks)

11 Construct the pi- molecular orbita lenergy level -diagram of 1,3-Butadiene 10M

OR

12 Explain the effect of doping in semiconductors. 10M

13 Explain the ion -exchange process in thesoftening of water? 10M

OR

14 Explain the estimation of hardness of water byusing EDTA method? 10M

15 (a) Explain the construction and working of a calomel electrode? 5M

(b) Explain the working and applications of Methanol-O_2 fuel cell?. 5M

OR

16 Explain the construction, working and applications of Li- ion battery? 10M

17 Explain the conformational analysis of n-Butane? 10M

OR

18 (a) Explain about Electrophilic addition Reactions? 5M

(b) Explain the Synthesis of Aspirin and Mention the therapeutic applications. 5M

19 Explain about the molecular vibrations in IR spectroscopy. 10M

OR

20 a) Explain about the Transitions involved in Uv spectroscopy. 5M

b) Write a note on MRI. 5M