



R17 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

Subject: 1B2AB

B.Tech. I Year II Semester Supplementary Examinations, September 2023

Engineering Chemistry

(Common to CE & ME)

Maximum Marks: 70

Date: 16.09.2023 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 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

10x2M=20 Marks

1. Define hardness of water.
2. Sample of hardness of water contain 11.1 mg/lit of CaCl_2 and 14.6 mg/lit of $\text{Mg}(\text{HCO})_3$ express their hardness in terms of CaCO_3 equivalent.
3. Define batteries. How are they classified?
4. What is electrode potential?
5. Define polymer.
6. What is Vulcanization?
7. Give the uses of Natural Gas?
8. Distinguish between HCV and LCV of a fuel.
9. Define Refractories.
10. What is lubricant?

Part-B

Answer all the questions

5X10M=50Marks

11. Describe the estimation of hardness of water by EDTA method. (10M)

OR

12. Explain the treatment of potable water by Municipalities in detail. (10M)

13. What are fuel cells? Explain the hydrogen oxygen fuel cell and give its applications (10M)

OR

14. What are reference electrodes? How do you determine the pH of an unknown solution by making use of glass electrode? (10M)

15. Describe the injection moulding process with the help of a neat sketch. (10M)

OR

16. a) Give an account of preparation, properties & engineering uses of the following.

i) Bakelite ii) PVC (5M+5M)

17. Discuss the Fischer-Tropsch's process for the manufacturing of synthetic petrol. (10M)

OR

18. Explain the ultimate analysis of coal and its significance. (10M)

19. Explain the following mechanisms of lubrication. (5M+5M)

i) Thin film ii) Extreme pressure

OR

20. What are refractories? Discuss the RUL test and seger cone test of a refractory material? (10M)