



R17 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

Subject code:1B2AB

B.Tech I Year II Semester Supplementary Examinations, October 2022

Engineering Chemistry

(Common to CE & ME)

Maximum Marks: 70

Date:13.10.2022

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 What is hardness of water? How do you express hardness?
- 2 Write the break point chlorination?
- 3 What is an electrochemical cell?
- 4 Write the cell reactions of Hydrogen –Oxygen fuel cell.
- 5 Write the application of fiber reinforced polymers (FRP) ?
- 6 Explain the preparation of PVC (Poly Vinyl Chloride) and its applications.
- 7 Define fuel? What are the characteristics of a good fuel?
- 8 Distinguish between HCV & LCV.
- 9 Define lubricants and give examples?
- 10 Write a brief account on setting and hardening of cement.

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 a) Explain the various methods available for desalination. 5M
b) Explain the Defluoridation of Nalgonda technique. 5M

OR

- 12 Write a short notes on i) Calgon conditioning ii) Sludges and Scales iii) Reverse osmosis. (3+3+4)M

- 13 a) How do you calculate the pH of a solution by making use of Calmol electrode? 5M
b) What are fuel cells? Explain the Methanol-oxygen fuel cell and its applications. 5M

OR

- 14 Explain the composition, applications and advantages of the following cells
i) Dry cell ii) Lithium cell iii) Lead acid cell (4+3+3)M
- 15 Write the preparation of the following polymers and engineering applications. (4+3+3)M
i) Bakelite ii) PVC iii) Nylon 6,6

OR

- 16 Write Preparation & properties and application of Buna-S, Butyl and Thiokol rubber. 10M

- 17 Write short notes on the following.
i) Refining of gasoline ii) LPG iii) Moving bed catalytic cracking (4+3+3)M

OR

- 18 What is calorific value of a fuel? What are the units of calorific value? Explain the different types of calorific values. 10M

- 19 Explain the various mechanisms of lubrication in details. 10M

OR

- 20 How many types of refractories with suitable examples and applications of refractories. 10M