



Regulation R18

Subject code: 2B2AC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech II Semester Regular/Supplementary Examinations, November 2020

Engineering Chemistry

(Common to CE,EEE,ME & IT)

Maximum Marks: 70

Date: 13.11.2020 Duration: 2 Hours

Part-A

All the following questions carry equal marks (10x1M=10 Marks)

- 1 Write two differences between atomic and molecular orbitals?
- 2 Explain Bond order in N_2 molecule.
- 3 What is reverse Osmosis?
- 4 Write units of hardness of water.
- 5 What is electrode potential?
- 6 Define primary battery?
- 7 Define diastereomers?
- 8 Define isomerism?
- 9 What is meant by chemical shift?
- 10 What is meant by spectroscopy?

Part-B

Answer ANY FIVE QUESTIONS

(12MX 5=60Marks)

- 11 Write difference between Atomic orbital and Molecular orbital? (12M)
- 12 Explain the crystal field Splitting of Tetrahedral metal complexes. (12M)
- 13 What is hardness of water? (12M)
Calculate the temporary and permanent hardness of 1000 ml of water containing the following impurities per ltr. $MgCl_2 = 19$ mgs, $MgSO_4 = 60$ mg, $NaCl = 36.5$ mg, $CaCl_2 = 11.1$ mg, $Ca(HCO_3)_2 = 32.4$ mg, $Mg(HCO_3)_2 = 7.3$ mgs.
- 14 What is the principle of EDTA method? Describe estimation of hardness of water by EDTA method. (12M)
- 15 Derive Nernst equation and Explain the terms involved in it. (12M)
- 16 Explain dry corrosion with mechanism. (12M)
- 17 What are molecular rearrangement? Explain Wagner Meerwein rearrangement. (12M)
- 18 Discuss confirmation analysis of n-butane. (12M)
- 19 Write the molecular vibrations in IR Spectroscopy? (12M)
- 20 Explain the electron transitions in UV-Visible spectroscopy. (12M)