



THE AMERICAN COLLEGE, MADURAI
(An Autonomous Institution Affiliated to Madurai Kamaraj University)
Re-accredited (2nd Cycle) by NAAC with Grade "A", CGPA – 3.46 on a 4-point scale
Backlog Arrear Examination, March 2021

CHE 2413/143/ZOO

CHEMISTRY FOR ZOOLOGIST - I

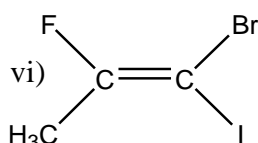
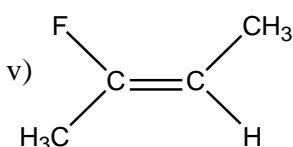
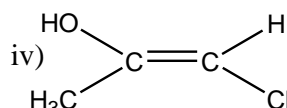
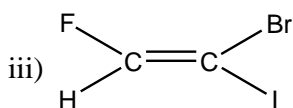
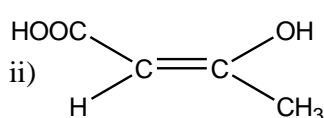
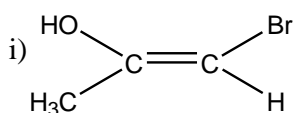
Time: 3 Hours

Max Marks: 75

Answer any FIVE questions

5X15 = 75

- Draw the shapes of p_x , d_{xy} , d_z^2 and $d_{x^2-y^2}$ orbital's. (3)
 - Explain the following i) London forces ii) dipole-ion interactions. (5)
 - Write the electronic configuration of the following elements
 - Copper ii) Iron iii) Carbon iv) Oxygen (4)
 - Write a note on the following periodic properties
 - Electronegativity ii) Electron affinity (8)
- Write the IUPAC nomenclature of the following compounds. (5)
 - $\text{CH}_3(\text{CH}_2)_3\text{NO}_2$
 - $\text{CH}_3\text{NH}_2\text{CH}_2\text{CH}_3$
 - $\text{CH}_3\text{CH}_2\text{COOCH}_3$
 - $\text{CH}_3\text{CH}_2\text{COCH}_2\text{CH}_3$
 - $\text{CH}_3(\text{CH}_2)_2\text{CHO}$
- Distinguish between enantiomers and diastereoisomers. (5)
 - What do you mean by racemic mixture and meso compound? (4)
 - Identify the following organic compounds as E and Z. (6)



- Compare thermal and photochemical reactions. (4)
 - Describe the process of photosynthesis. (4)
 - Explain chemiluminescence and photosensitization. (6)

- d) Define quantum yield. (1)
5. a) Briefly explain the change in entropy for the transformation of a system from solid to liquid and vice versa. (5)
- b) State and explain Le Chatelier's principle and its applications. (10)
6. a) Define buffer solution. Derive Henderson equation. (4)
- b) Classify solutions based on the amount of solute and solvent. (6)
- c) Describe the reverse osmosis process. (5)
7. a) Discuss the applications of photochemistry in biological systems. (5)
- b) Differentiate between fluorescence and phosphorescence. (6)
- c) Explain about electron sea model. (4)
