



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 1461

CHEMISTRY FOR BOTANIST -I

Time: 3 hours

Max:75 Marks

(Answer any Five Questions)

(5x15 = 75)

1. a) Briefly explain the following and explain the periodicity of the same. [9]
i) Electron affinity ii) Ionisation Energy iii) Electronegativity
b)) Using VSEPR theory predicts the structure of BCl₃ and H₂O. [6]
2. a) Define hydrogen bond. Discuss about the consequence of hydrogen bonding. [7]
b) Explain MO diagram for N₂ and O₂ [8]
3. Define the following reactive intermediates and explain their stability [15]
i) Carbocations ii) Carbanions iii) Free radicals
4. Explain the following reactions with examples [15]
i) Oxidation ii) Reduction iii) Substitution iv) Addition v) Rearrangement
5. a) Explain the entropy change for the phase transformation of the substance. [8]
b) State and explain the Le Chatelier principle with example. [7]
6. Explain the term osmotic pressure and its application in biological system. How will measure osmotic pressure? [15]
7. Write short notes on [15]
i) Fluorescence ii) Chemluminescence iii) Bioluminescence