



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 1513/CHS 1513

Inorganic Chemistry-I

Time: 3 hours

Max: 75 Marks

(Answer any Five Questions)

(5 x 15 = 75)

1. a) Explain the Pauling and Mulliken scale of electronegativity.
b) Write notes on the application of electronegativity. (10+5)
2. a) Describe the electrometallurgy and hydrometallurgy methods employed for the extraction of metals.
b) Differentiate auto oxidation and induced oxidation with mechanism. (10+5)
3. a) Discuss general physical and chemical properties of alkaline earth metals.
b) State and explain Slater's rule with limitation.
c) Explain the reduction of metal oxides of metal with the help of Elingham diagram. (7+4+4)
4. a) State HSAB principle and describe its application.
b) Discuss the solvolysis reactions in liquid ammonia. (8+7)
5. a) Define acid and bases according to the Lewis concept.
b) Differentiate carefully between ortho and para hydrogen. Explain clearly why the ratio of parahydrogen at room temperature
c) Define the term molarity. (6+6+3)
6. a) Explain what is meant by polarizing power of a cation. State and explain Fajan's rule for estimating the extent to which cation can polarize an anion.
b) Discuss the diagonal relationship of Li & Mg. (8+7)
7. a) What are primary standard and secondary standard ? List out the conditions for a Substance to be a primary standard.
b) Explain how selectivity in EDTA titration is done by changing pH and masking of ions. (8+7)