



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 2423

INORGANIC & PHYSICAL CHEMISTRY-II

Time: 3 Hours

Max Marks: 75

Answer any FIVE questions

5X15 = 75

1. a) Why does boron differ from the rest of its family members? Discuss the main points of difference (5)
b) What is meant by diagonal relationship in periodic classification? Discuss the diagonal relationship of boron with silicon. (5)
c) Give the preparation and properties of boron halides. Why these substances are called Lewis acid? (5)
2. a) What is catenation? Explain the uniqueness of carbon to catenate (5)
b) What are carbides? How do we classify them? (5)
c) How white lead is prepared? Describe the reactions involved in its preparation from lead (5)
3. a) Write the comparative study of trihydrides of Group 15 elements (6)
b) What are the types of solvents and write the characteristics of solvents (9)
4. a) What are redox titrations? Give examples. Discuss briefly the theory of redox indicators (10)
b) How are the EDTA titrations carried out? (5)
5. a) Give a note on Milliken's oil drop techniques (7.5)
b) Briefly discuss about Bohr's model of hydrogen atom (7.5)
6. a) Write the postulates of quantum mechanics (5)
b) Setup and solve the Schrodinger wave equation from a particle in a 3-D box (10)
7. a) Distinguish between physisorption and chemisorption (7)
b) Derive Langmuir adsorption isotherm (8)