

B.Sc III Year – Paper-III**90 hrs (3 h / w)****UNIT – I (Inorganic Chemistry – III)****30 hrs (1 h / w)**

1. Coordination Chemistry 10 h
2. Spectral and magnetic properties of metal complexes 4 h
3. Reactivity of metal complexes 4 h
4. Stability of metal complexes 4 h
5. Hard and soft acids and bases 4 h
6. Bioinorganic Chemistry 4 h

UNIT – II (Organic Chemistry – III)**30 hrs (1 h / w)**

1. Nitrogen compounds 9 h
2. Heterocyclic compounds 5 h
3. Carbohydrates 6 h
4. Amino acids and Proteins 5 h
5. Mass spectroscopy 5 h

UNIT – III (Physical Chemistry – III)**30 hrs (1 h / w)**

1. Chemical kinetics 9 h
2. Photochemistry 5 h
3. Thermodynamics 16 h

Paper-IV**90 hrs (3 h / w)****Chemistry and Industry****UNIT – I (Physico chemical methods of Analysis)****30 hrs (1 h / w)**

1. Separation techniques 12 h
2. Spectrophotometry 4 h
3. Molecular spectroscopy 14 h

UNIT – II (Drugs, Formulation, Pesticides & Green Chemistry)**30 hrs (1 h / w)**

1. Drugs 17 h
2. Formulations 3 h
3. Pesticides 5 h
4. Green Chemistry 5 h

UNIT – III (Macromolecules, materials science and catalysis)**30 hrs (1 h / w)**

1. Macromolecules 10 h
2. Materials Science 8 h
3. Catalysis 12 h

LABORATORY COURSE – III

90 hrs (3 h / w)

Practical Paper – III (Organic Chemistry)

1. Synthesis of organic compounds
2. Thin layer and Column chromatography
3. Organic qualitative analysis
 - a. Identification of Individual organic compounds
 - b. Separation of two component mixtures
4. Demonstration experiments
 - a. Microwave assisted Green synthesis
 - b. Steam distillation experiment

LABORATORY COURSE – IV

90 hrs (3 h / w)

Practical Paper – IV (Physical Chemistry)

1. Chemical kinetics
2. Distribution Law
3. Electrochemistry
4. pH metry
5. Colorimetry
6. Adsorption
7. Project work

Note: From above experiment one experiment of 40 marks and project work of 10 marks at the University examination.

