

B.Sc. Chemistry **(Three Year Degree Course)**

Second Year (Third Semester)

Paper VII	Organic Chemistry	Third Semester (45 hrs) 3Hrs / Week
1	Alcohols	06 Hrs
2	Phenols	06 Hrs
3	Aldehydes and Ketones	10 Hrs
4	Carboxylic Acids	09 Hrs
5	Organic Compounds' of Nitrogen	14 Hrs
Paper VIII	Physical Chemistry	(45 hrs) 3Hrs / Week
1	Thermodynamics-I	15 Hrs
2	Thermodynamics-II	20 Hrs
3	Chemical Equilibrium	10 Hrs
Paper IX	Lab Course III (Physical / Inorganic)	90 Hrs

B. SC. THIRD YEAR

Semester V

Paper XV

Organic Chemistry

Lab Course: V

Marks: 50

Binary Mixture:

Separation and Identification of both components

- i) Benzoic Acid + β -naphthol
- ii) Salicylic Acid + P- nitro aniline
- iii) β -naphthol + Acetanilide
- iv) m-nitroaniline + Naphthalene
- v) α -naphthol + O-nitroaniline
- vi) Cinnamic Acid + Naphthalene
- vii) Salicylic Acid + Naphthalene
- viii) β -naphthol + m-dinitrobenzene
- ix) Cinnamic Acid + P- nitro aniline
- x) Salicylic Acid + β -naphthol

B. SC. THIRD YEAR

Paper XVII Organic Chemistry [VIth Semester]

45 Hrs. (3 Hrs/week)

1. Heterocyclic Compounds

13 Hrs.

Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine, Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution. Mechanism of nucleophilic substitution reactions in pyridine. Comparison of basicity of pyridine, piperidine and pyrrole. Condensed Heterocycles: Introduction, Preparation of Quinoline (Skraups Synthesis), Isoquinoline (Bischler - Napirlaski) and Indole (Fischer indole Synthesis).

2. Carbohydrates

10 Hrs.

Defination, Introduction and Classification.

Monsaccharides-Interconversion of Glucose and Fructose, chain lengthening, chain shortening of aldoses. Conversion of Glucose in to mannose. Determination of openchain structure of glucose & pyranose ring structure of glucose . Mechanism of Mutarotation and Introduction to disaccharides (maltose, sucrose and lactose) and

Polysaccharides (Starch and cellulose) without involving structure determination.

3. Synthetic Polymers.

07 Hrs.

Introduction, Classification based on nature of synthesis (without mechanism) with examples. (Addition and condensation polymers). Properties, uses and synthesis of polyvinyl chloride, polyvinyl acetate, polystyrene, polyacrylonitrile, Nylon 6, Nylon 66. Introduction to synthetic and natural rubber, properties, uses and synthesis of Buna N., Neoprene and silicon rubber.

4. Synthetic Dyes and Drugs

15 Hrs.

Synthetic Dyes - Definition, colour and constitution (electronic concept) of dye, classification based on chemical constitution, synthesis of methyl orange, Congo red, malachite green, crystal violet, Alizarin and indigo dyes.

Synthetic Drugs - Definition, introduction, classification of drugs. Properties of ideal drug. Synthesis of chloromycetin, paracetamol, phenacetin, sulphaguanidine.