

Gujarat Technological University

M. Pharm. Syllabus

Semester I

910201: Chemistry of Natural Products

Theory

Four hours per week, 6 Credits

Course Content:

Hours

1. Carbohydrates:

10

Brief introduction, Configuration of monosaccharids, ring structure of monosaccharides, disaccharides – determination of structures of sucrose, maltose and lactose, Polysaccharides – cellulose and starch, Introduction to pectin and pectic substances

2. Amino acids and polypeptides:

12

Introduction, classification, synthesis of amino acids, protein classification, Synthesis of naturally occurring proteins, structure of polypeptides, amino and carboxyl end degradation, polypeptide synthesis, composition, structure and chemistry of oxytocin, insulin and angiotensin, peptides of medicinal importance.

3. Alkaloids:

08

Classification, general methods of degradation and structure determination, morphine, ergotamine, reserpine, colchicine, vinca and podophyllum alkaloids.

4. Steroids:

08

Stereochemistry, conformational studies of steroidal nucleus, chemistry of cholesterol, stereochemistry of side chain at C-17, cholic acid, vit. D₃, cortisone, aldosterone.

5. Anthocyanins:

05

Introduction, general nature, synthesis, structure of anthocyanidin, flavones, isoflavones and depsides.

6. Purines and nucleic acids

03

7. Heterocyclic Chemistry

14

Introduction, nomenclature, properties, synthesis and reactions involved in five and six member heterocycles. Heterocycles with one, two or more than two hetero atoms, biological importance of heterocycles.

Reference Books:

1. Organic Chemistry, Vol. I & II by Finar, Pearson Education.
2. Organic Chemistry, R. T. Morrison, R. N. Boyd, Prentice-Hall of India Pvt. Ltd., New Delhi.
3. Organic Chemistry, G. Marc Loudon, Oxford University Press., New York.