Govind Guru University

B.Sc.Semester III

Chemistry-201 [Organic Chemistry]

Unit:-I

[A] Carbohydrates: Marks-8 (Lec.-8)

Introduction, classification of carbohydrates, Osazone formation, step up and stepdown reaction of monosaccharide's, simple structure of glucose and fructose, Fischer's proof of configuration of D-glucose.

[B] Amino acid: Marks-6 (Lec.-4)

Introduction of amino acid, Classification and properties of amino acids, Zwitterion, Isoelectric point,Strecker's and Gabriel's Pthalimide synthesis of amino acids.

Unit:-II

[A] Electrophilic aromatic Substitution: Marks-7 (Lec.-6)

Introduction, effect of groups, determination of orientation and relative reactivity, Classification of substitution groups, (Nitration, Sulfonation, Halogenation, Friedel Craft alkylation and acylation), Orientation in only disubstituted benzene.

[B] Polynuclear Hydrocarbon: Marks-7 (Lec.-6)

Nomenclature, structure and synthesis of Naphthalene and substituted Naphthalene (Only Howarth synthesis), Reactions (oxidation reduction and electrophilic substation reaction (ESR) of naphthalene.Howarth synthesis of Anthreacene and Phenantheren.

Unit:- III

[A] Heterocyclic Compound: Marks-8 (Lec.-8)

Introduction, structure of Pyrrole, Furan and Thiophene, only PallKnoor Synthesis and electrophilic substationreaction ofPyrrole, Furan and Thiophene, reactivity and orientation of electrophilic substation reaction (ESR) in five membered

heterocycles (Pyrrole, Furan and Thiophene), Acidity and Basicity of Pyrrole, Structure of Pyridine, Electrophilic and Nucleophilic substation reaction and synthesis of pyridine.

[B] Name reaction:- **Marks-6 (Lec.-4)**

Hoffmann's Reaction, Diels-Alder Reaction, Perkin's Reaction

Unit:- IV **Marks-14 (Lec.-12)**

Chemical Reactivity and Molecular Structure: (Acid – Base Properties)

Acid-Base, Scale of acidity-basicity, Resonance effect, drawing of structure and the condition for resonance, Effect of change of hybridization on acidity and basicity, Inductive and electronic effects, steric effect and hydrogen bonding, Keto–enoltautomerism.Difference between resonance and tautomerism.

REFRENCES

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2.Finar**,** I. L.***"Organic Chemistry"* (Volume 1 &2)Dorling Kindersley (India) Pvt Ltd, (Pearson Eduction)

3. Nelson, D. L. & Cox, M. M. Lehninger's***"Principles of Biochemistry"*** 7th Ed. W. H. Freeman.

4. Mahan, B. H. ***"University Chemistry"***, 3rd Ed. Narosa (1998).

5.Petrucci. R. H. ***"General Chemistry"*** 5th Ed. Macmillan Publishing Co.: New York (1985)

6. ArunBhal, B. S. Bhal, ***"Advance Organic Chemistry"***, S. Chand & Company Ltd., New Delhi, 1st Ed. (2003).

7.P. S. Kalsi, ***"Tex book of Organic Chemistry"*** MacMillan Of India Pvt. Ltd., (1999).

8.Bhupinder Mehta, manju Mehta, **"*Organic Chemistry"***, Prentice Hall of India Pvt. Ltd., New Delhi, (2005).

9. Dr. O.P. Agrawal **"Reactions and Reagents"** 24th Ed. Krishna PrakashanMandir, Meerut (1995-96)