SARDAR PATEL UNIVERSITY
Programme: B.Sc (Industrial Chemistry)
Semester: V
Syllabus with effect from: June - 2013

Paper Code: US05CICH01	**Total Credit: 3**
Title of Paper: Organic Chemistry - II	

Unit	Description in detail	Weightage (%)
I	Nomenclature of heterocyclic systems (Five and Six member only), five member heterocycles- structure, source and electrophilic substitution reaction in Pyrrole, Thiophene and furan, saturated five membered heterocycles. Six membered heterocycles- structure and source of pyridine compounds, nucleophilic and electrophilic substitution reaction in pyridine, basicity of pyridine, reduction of pyridine. Skraup synthesis of Quinoline and Bischler-Nspierlaski synthesis of isoquinoline.	**25%**
II	Introduction, Nomenclature, Structure, Preparation and Reactions of Naphthalene, Anthracene and Phenanthrene.	**25%**
III	Reactive intermediates: Formation, Structure, Stability of carbocation, carbanion, types of reactions, Types of Mechanism, Meerwein–Ponndorf–Verley Reduction, Aldol condensation, Diels–Alder Reaction. Rearrangements: Introduction, Types of Molecular Rearrangement: Pinacol – Pinacolone Rearrangement, Benzilic Acid Rearrangement. Reagents of Synthetic Importance: Preparation and uses of Aluminiumisopropoxide,N-Bromosuccinimide (NBS), Lead tetra acetate, Osmium Tetraoxide, and Selenium dioxide.	**25%**
IV	Spectroscopy: Introduction, Theory, Instrumentation and Applications of Infrared (IR) Spectroscopy, Proton Nuclear Magnetic Resonance (NMR) Spectroscopy and Mass Spectroscopy. Problems pertaining to the structure elucidation of organic compounds using UV, IR, Mass and PMR spectroscopy.	**25%**

Basic Text & Reference Books:

- Organic Chemistry by M. K. Jain and S. C. Jain (ShobanLAlNagin Chand & Co.
- Educational Publishers, Jalandhar).
- Rreaction Mechanism and reagents in Organic Chemistry. By Gurdeep R. Chatwal, Himalaya Publishing House. Delhi.
- Organic Chemistry by Robert T. Morrison and Robert T. Boyd (VIth Edition, Prentice
- Hall of India Pvt. Ltd. New Delhi)
- Organic Chemistry by R. K. Bansal (Tata McGraw – Hill Publishing Co. Ltd. New Delhi)
- Spectroscopy of Organic Compounds, by P. S. Kalsi, New Age international Publications.