Subject Code : P8BIE3B

MEDICINAL CHEMISTRY

UNIT - I

Introduction to Medicinal Chemistry-Folk and Herbal Medicine -Introduction to Important Functional Groups in Medicinal Chemistry-Physico-chemical Aspects and Principals of Drug Action-Functional Groups and Isosteres (peptidomimetics)

UNIT - II

Introduction to Computational Molecular Modeling- Quantitative Structure Activity Relationships (QSAR) Metabolism and Prodrugs - Drug-Receptors Interactions and Receptor-Effector Theories- Enzymes: catalysis, representative mechanisms of action and inhibition/inactivation-Receptors and transporters -DNA-interactive drugs.

UNIT - III

Combinatorial Chemistry and Rapid Parallel Syntheses - General properties, chemistry, biological action, structure activity relationship and therapeutic applications of Alicyclic compounds-Alkaloids-Vitamins-Hormones

UNIT - IV

Anti-Infective Agents: Anti-viral Agents-Anti-bacterial Agents-Neuroactive Agents: CNS Depressants-CNS Stimulants-Cholinergic Agents-Adrenergic, Dopaminergic and Serotenergic Agents

UNIT - V

Neuroactive Amino Acid Analogs: GABA, Glutamate and Glycine - Cardiovascular Agents (Renin-Angiotensin, etc.)-Antineoplastic Agents (mustards, anti-folates, etc.) -Steroids, Hormones and Cholesterol Lowering Agents

Reference Books

1. Foye's Principles of Medicinal Chemistry, 5th edition; David A. Williams, William O. Foye, Thomas L. Lemke; Lippincott Williams & Wilkins: Philadelphia, 2002.
2. Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, 11th edition; Delgado & Remers, Eds.; Lippincott Williams & Wilkins: Philadelphia, 2004
3. Delgado, J and Remers, W., "Textbook of Organic Medicinal and Pharmaceutical Chemistry," Lippincott-Raven, Philadelphia, 1998.
4. Perum J. and Propst C.L. Computer-Aided Drug Design Methods and Applications. Marcel Dekker Inc., New York, 1989
5. Richard B. Silver. The Organic Chemistry of Drug Design and Drug Action. Academic Press, Pnen, Inc., USA, 1992