MPH2D.1 PHARMACOKINETICS & DRUG METABOLISM 3 Hrs/Week

THEORY

UNIT-I

Drug absorption: Gastrointestinal, Percutaneous and rectal kinetics and factors affecting drug absorption and bioavailability

UNIT-II

Drug distribution: Plasma protein binding – Factors affecting plasma protein binding, Tissue binding, transfer of drugs through biological barriers and their therapeutic implication in drug action.
Elimination of drugs: Concept of renal clearance and excretion of drugs, biological half-life.

UNIT-III

Reaction of body to foreign substances: Biotransformation of drugs, phase I and phase II metabolic reactions. Microsomal and non microsomal reactions.
Drug metabolism in liver, kidney, intestine and placenta. Drug metabolism in fetus and new born. In-vitro and In-vivo studies in drug metabolism

UNIT-IV

Factors influencing drug metabolism: 1. Stereo chemical, and physico chemical factors, 2. Physiological factors: species difference, stain difference, sex, age and environmental factors. 3. Pathological states, 4. Genetic factors: Pharmacogenetics, heritable factors recognized in man by use of drugs.

REFERENCES:

1. Gibaldi, M. and Donald Perrier – Pharmacokinetics
2. Rowland, M. and Tozer, T.N. , Clinical Pharmacokinetics – Concepts and applications, Lea and Fibiger, USA
3. Abdou, H.M., Dissolution, Bioavailability and Bioequivalence, Mack Publishing Co. Ltd., Easton, PA
4. Applied Biopharmaceutics and Pharmacokinetics by Leon Shargel, Susanna WU – Pong & Andrew B.C. Yu
5. Principles of Medicinal Chemistry by William O. Foye, Thomas L. Lemke and David A. Williams
6. Wilson and Gisvold's text book of Organic Medicinal and Pharmaceutical Chemistry by Jaime N. Delgado & William A. Remers