Syllabus for Post No 08

Anatomy & Physiology of Animals
Animal Nutrition
Anatomy of Digestive system & Physiology of Digestion
Anatomy and Physiology of Respiratory System
Anatomy and Physiology of the Cardio Vascular System
Anatomy and Physiology of Excretion and Osmoregulation
Control and Coordination Physiology of Nervous System
Movements and Locomotion
Control and Coordination Endocrine System
Animal Reproduction
Cellular Physiology and Homeostasis
Body water and Fluids
Metabolism

Biochemistry
Carbohydrates
Proteins
Lipids
Buffers

Hazard Identification
Assessing Toxicity of Chemicals
Methods of Assessing Toxicity of Chemicals
Structure–Activity Relationships
In vitro and Short-Term assay systems
Animal Bioassays

Mode of Action of Xenobiotics
Dose-Response Assessment
Models Derived from Mechanistic Assumptions
Toxicologic Enhancements of the Models
Risk characterization
Variation in Susceptibility
Exposure Assessment

Cell Membranes
Passive Transport
Simple Diffusion
Filtration
Special Transport
Active Transport
Xenobiotic Transporters
Facilitated Diffusion
Additional Transport Processes

Absorption
Absorption of Toxicants by the Gastrointestinal Tract
Absorption of Toxicants by the Lungs
Gases and Vapors
Aerosols and Particles
Absorption of Toxicants Through the Skin
Absorption of Toxicants after Special Routes of Administration

Distribution
Volume of Distribution
Storage of Toxicants in Tissues
Plasma Proteins as Storage Depot
Liver and Kidney as Storage Depots
Fat as Storage Depot
Bone as Storage Depot
Blood–Brain Barrier
Passage of Toxicants Across the Placenta
Redistribution of Toxicants

Excretion
Urinary Excretion
Fecal Excretion
Nonabsorbed Ingesta
Biliary Excretion
Exhalation
Other Routes of Elimination
Cerebrospinal Fluid
Milk
Sweat and Saliva
Xenobiotic Biotranformation

Hydrolysis
Carboxylesterases
Cholinesterases (AChE and BChE)
Paraoxonases (Lactonases)
Prodrugs and Alkaline Phosphatase
Peptidases
Epoxide Hydrolases

Reduction
Azo- and Nitro-Reduction
Carbonyl Reduction—SDRs and AKRs
Disulfide Reduction
Sulfoxide and N-Oxide Reduction
Quinone Reduction—NQO1 and NQO2
Dihydropyrimidine Dehydrogenase (DPD)
Dehalogenation

Dehydroxylation—Cytochrome b5 and Aldehyde Oxidase
Aldehyde Oxidase—Reductive Reactions

Oxidation
Alcohol, Aldehyde, Ketone Oxidation–Reduction Systems
Alcohol Dehydrogenase
Aldehyde Dehydrogenase
Dihydrodiol Dehydrogenase
Molybdenum Hydroxylases (Molybdozymes)
Xanthine Oxidoreductase
Aldehyde Oxidase
Monoamine Oxidase, Diamine Oxidase, and Polyamine Oxidase
Semicarbazide-Sensitive Amine Oxidase (SSAO)
Aromatization
Peroxidase-Dependent Cooxidation
Flavin Monooxygenases
Cytochrome P450
Activation of Xenobiotics by Cytochrome P450
Inhibition of Cytochrome P450
Induction of Cytochrome P450—Xenosensors

Conjugation
Glucuronidation
Sulfonation
Methylation
Acetylation
Amino Acid Conjugation
Glutathione Conjugation
Thiosulfate Sulfurtransferase (Rhodanese)
Phosphorylation

Cells and tissues
Cell types in the animal system
Components of Blood and their contribution to body physiology
Primary and secondary changes in tissues
Hisology and Tissue Processing
Various staining techniques
Microbiology Immunology, serology& Immunohematology
Proteins and Enzymes
Parasitology and parasitic infections
Microbiology

Besics of Genes, Genetics, Mutations and Variations
Carcinogenesis
Developmental Toxicity