Syllabus for GPAT Pharmacology

1. Pathophysiology of common diseases; Basic Principles of Cell Injury and Adaptations: Causes of Cellular injury, pathogenesis, morphology of cell injury, adaptations and cell death. Basic Mechanisms involved in the process of inflammation and repair: Vascular and cellular events of acute inflammation, chemical mediators of inflammation, pathogenesis of chronic inflammation, brief outline of the process of repair.

2. Immunopathophysiology: T and B cells, MHC proteins, antigen presenting cells, immune tolerance, pathogenesis of hypersensitivity reactions, autoimmune diseases, AIDS, Amyloidosis.

3. Pathophysiology of Common Diseases: Asthma, diabetes, rheumatoid arthritis, gout, ulcerative colitis, neoplasia, psychosis, depression, mania, epilepsy, acute and chronic renal failure, hypertension, angina, congestive heart failure, atherosclerosis, myocardial infarction, congestive heart failure, peptic ulcer, anemias, hepatic disorders, tuberculosis, urinary tract infections and sexually transmitted diseases. Wherever applicable the molecular basis should be discussed.

4. Fundamentals of general pharmacology: Dosage forms and routes of administration, mechanism of action, combined effect of drugs, factors modifying drug action, tolerance and dependence; Pharmacogenetics; Principles of Basic and Clinical pharmacokinetics, absorption, Distribution, Metabolism and Excretion of drugs, Adverse Drug Reactions; Bioassay of Drugs and Biological Standardization; Discovery and development of new drugs, Bioavailability and bioequivalence studies; Pharmacology of Peripheral Nervous System: Neurohumoral transmission (autonomic and somatic), Parasympathomimetics, Parasympatholytics, Sympathomimetics, Adrenergic receptor and neuron blocking agents, Ganglion stimulants and blocking agents, Neuromuscular blocking Agents, Local anesthetic Agents. Pharmacology of Central Nervous System: Neurohumoral transmission in the C. N. S. General Anesthetics, Alcohols and disulfiram, Sedatives, Hypnotics, Anti-anxiety agents and Centrally acting muscle relaxants, Psychopharmacological agents (anti-psychotics), anti-maniacs and hallucinogens, Antidepressants, Anti-epileptics drugs, Anti-Parkinsonian drugs, Analgesics, Antipyretics, Narcotic analgesics and antagonists, C. N. S. Stimulants, Drug Addiction and Drug Abuse. Pharmacology of Cardiovascular System: Drugs used in the management of congestive cardiac failure, Antihypertensive drugs, Anti-anginal and Vasodilator drugs, including calcium channel blockers and beta adrenergic antagonists, Anti-arrhythmic drugs, Anti-hyperlipedemic drugs, Drugs used in the therapy of shock. Drugs Acting on the Hemopoietic System: Hematinics, Anticoagulants, Vitamin K and hemostatic agents, Fibrinolytic and anti-platelet drugs, Blood and plasma volume

expanders. Drugs acting on urinary system: Fluid and electrolyte balance, Diuretics. Autacoids: Histamine, Antihistaminic drugs, 5-HT-its agonists and antagonists, Prostaglandins, thromboxanes and leukotrienes, Angiotensin, Bradykinin and Substance P and other vasoactive peptides, non-steroidal anti-inflammatory and anti-gout agents. Drugs Acting on the Respiratory System: Anti-asthmatic drugs including bronchodilators, Anti-tussives and expectorants, Respiratory stimulants. Drugs acting on the Gastrointestinal Tract: Antacids, Anti-secretory and Anti-ulcer drugs, Laxatives and anti-diarrhoeal drugs, Appetite Stimulants and Suppressants, Emetics and anti-emetics, Miscellaneous: Carminatives, demulcents, protectives, adsorbents, astringents, digestants, enzymes and mucolytics. Pharmacology of Endocrine System: Hypothalamic and pituitary hormones, Thyroid hormones and anti thyroid drugs, parathormone, calcitonin and Vitamin D, Insulin, glucagons, incretins, oral hypoglycemic agents and insulin analogs, ACTH and corticosteroids, Androgens and anabolic steroids, Estrogens, progesterone and oral contraceptives, Drugs acting on the uterus. Chemotherapy: General Principles of Chemotherapy, Bacterial resistance; Sulfonamides and cotrimoxazole, Antibiotics-Penicillins, Cephalosporins, Aminoglycosides, Chloramphenicol, Macrolides, Tetracyclines, Quinolones, fluoroquinolones and Miscellaneous antibiotics; Chemotherapy of tuberculosis, leprosy, fungal diseases, viral diseases, HIV and AIDS, urinary tract infections and sexually transmitted diseases, malaria, amoebiasis and other protozoal infections and Anthelmentics. Chemotherapy of malignancy and immunosuppressive agents. Principles of Toxicology: Definition of poison, general principles of treatment of poisoning with particular reference to barbiturates, opioids, organophosphorous and atropine poisoning, Heavy metals and heavy metal antagonists.

5. Basic Concepts of Pharmacotherapy: Clinical Pharmacokinetics and individualization of Drug therapy, Drug delivery systems and their Biopharmaceutic & Therapeutic considerations, Drugs used during infancy and in the elderly persons (Pediatrics & Geriatrics), Drugs used during pregnancy, Drug induced diseases, The basics of drug interactions, General principles of clinical toxicology, Common clinical laboratory tests and their interpretation; Important Disorders of Organs, Systems and their Management: Cardio-vascular disorders-Hypertension, Congestive heart failure, Angina, Acute myocardial infarction, Cardiac arrhythmias. CNS Disorders: Epilepsy, Parkinsonism, Schizophrenia, Depression Respiratory disease-Asthma. Gastrointestinal Disorders-Peptic ulcer, Ulcerative colitis, Hepatitis, Cirrhosis. Endocrine Disorders-Diabetes mellitus and Thyroid disorders. Infectious Diseases-Tuberculosis, Urinary tract infections, Enteric infections, Upper respiratory infections. Hematopoietic Disorders-Anemias, Joint and Connective tissue disorders-Rheumatic diseases, Gout and Hyperuricemia. Neoplastic Diseases-Acute Leukaemias, Hodgkin's disease. Therapeutic Drug Monitoring, Concept of Essential Drugs and Rational Drug use.