

THIRD PROFESSIONAL

PATHOLOGY (Theory)

Paper 1

Marks 50

1. **SCOPE OF PATHOLOGY & CONCEPT OF DISEASES:**
2. **DEFINITION AND TERMINOLOGY:** Ischemia, Hypoxia, Necrosis, Infarction, Atrophy, Hypertrophy, Hyperplasia, Metaplasia, Aplasia, Anaplasia.
3. **RESPONSE OF BODY TO INJURY AND INFECTION:** Acute and Chronic inflammation, Immunity, Allergy, Hyper Sensitivity.
4. **SPECIFIC DISEASES:** Ulcer (Peptic, Duodenal), Hypertension, Leukemia or Blood Cancer (Malignant Carcinoma, Sarcoma & Lymphomas), Diagnosis and treatment of Cancer in general, fate, survival and prognosis with tumors.

PATHOLOGY (Practical)

Paper 7

Marks 50

Study of Pathological Slides of various Pathological Conditions: Acute inflammation, Chronic inflammation, Chronic specific inflammation, Different types of Degeneration, Thrombosis, Embolism, Infarction, Necrosis, Gangrene, Hyperplasia, Metaplasia, Pigmentation, Calcification, CVC, Papilloma, Adenoma, Chondroma, Fibroma, Leiomyoma, Neofibroma, Squamous Cell Carcinoma, Basal Cell Carcinoma, Transitional Cell Carcinoma, Adenocarcinoma, Fibrocarcinoma, Rhabdomyosarcoma, Leiomyosarcoma, Lymphosarcoma, Liposarcoma, Reticular Cell Sarcoma, Hodgkins disease, Breast Carcinoma, Osteogenic Sarcoma, Osteoclastoma, Hepatitis, Diabetes.

Examination of different body fluids in various Pathological Conditions: Urine Complete Examination, Stool Examination, Blood Complete Examination, Semen Examination, Cerebrospinal Fluid Examination, Pericardial Fluid Examination, Pleural Fluid Examination, Ascitic Fluid Examination, Blood Sugar, Blood Urea, Blood Cholesterol etc.

Tests for various specimens of clinical importance: Techniques of Clinical Blood Examination for various diseases, Gastric Analysis, Tests for liver function, Renal function test, Tests for endocrine abnormalities, Biopsies and cytologic techniques.

PHARMACOLOGY AND THERAPEUTICS-II (Theory)

Paper 2

Marks 100

1. **DRUGS ACTING ON CENTRAL NERVOUS SYSTEM:**
 - (a) Sedatives & Hypnotic
 - (b) Anxiolytics, antidepressants and anti-manic drugs
 - (c) Antiepileptics

- (d) Antiparkinsonian and drug used in other neurodegenerative diseases.
- (e) Antipsychotics
- (f) Opioid analgesics
- (g) Therapeutic gases (Oxygen, Carbon-dioxide, Nitric oxide and Helium.
- (h) Cerebral Stimulants, Medullary stimulants, Spinal Cord Stimulants
- (i) Anesthetics: General and local

2. **NON-STEROIDAL ANTI-INFLAMMATORY DRUGS:** Disease modifying antirheumatic drugs, non- opioid analgesics and drugs used in the treatment of gout.

3. **CHEMOTHERAPY**

- Basic principles of chemotherapy
- Antibacterials (Folate antagonists :sulphonamides, Cell wall synthesis inhibitors; Penicillin, Cephalosporins, Carbapenam, Monobactam, Protein synthesis inhibitors; Aminoglycosides, Tetracyclines, Chloramphenicol, Macrolides, Nucleic acid synthesis inhibitors; Quinolones and miscellaneous Antibiotics), Anti-mycobacterial drugs, Urinary tract antiseptics,
- Anti-fungals
- Anti-virals
- Anti-protozoals: anti-malarias, anti-amebiasis, anthelmintics and anti-leishmanials.
- Anti-neoplastic drugs

4. **IMMUNOPHARMACOLOGY:** Pharmacology of immune-suppressants and stimulants

5. **TOXICOLOGY**

- (a) Pollution and its types (water, air, food)
- (b) Poison and principle of treatment of poisoning.
- (c) Poisoning (Sign & symptom and treatment): Ethanol, Barbiturates, Digitalis, Salicylates, Strychnine, Narcotics, Nicotine, Paracetamol, Benzodiazepines and Organophosphorous compounds.
- (d) Chelating agents and their role in poisoning: Dimercaprol, Calcium disodium Edetate (Calcium EDTA), Pencillamine and Defroxamine.

NOTE:

1. Only an introduction will be given of the banned and obsolete drug products.
2. While dealing with Pharmacology stress should be laid to the group actions of related drugs and only important differences should be discussed of the individual drugs placed in same group.
3. Newly introduced drugs should be included in the syllabus while drugs with no clinical and therapeutic values ought to be excluded from syllabus at any time.
4. The prototype drugs in each group from the latest edition of the recommended books.

PHARMACOLOGY AND THERAPEUTICS-II (Practical)

Paper 8

Marks 100

NOTE: Practical of the subject shall be designed from time to time on the basis of the above mentioned theoretical topics and availability of the facilities, e.g.

- To study the convulsant effects of strychnine and picrotoxin in frogs and to determine the site of action.
- To identify the unknown (convulsant) drug and determine its site of action.
- To study the effects of Adrenaline on Human Eyes.
- To study the effects of Pilocarpine on Human Eyes.
- To study the effect of Homatropine on Human Eyes.
- To identify and observe the effects of unknown drugs on Human Eyes.
- To study the effects of local anaesthetic drugs on human and the nerve plexus of frog.
- To identify and differentiate the effects of unknown drug on human and the nerve plexus of frog.
- To demonstrate the effects of Acetylcholine on the Rectus abdominus muscle of frog and competitive pharmacological antagonism by Neuromuscular blocking agent e.g. Gallamine.
- To identify the unknown drug by performing pharmacological competitive antagonism on Rectus abdominus muscle of Frog.
- To study the anti-coagulant effects of Heparin and oral anti-coagulants on Rabbits.
- To identify the unknown anticoagulant drug using Rabbits.
- To demonstrate the Graded Dose-Response curve of Acetylcholine on Rabbit intestine.
- To identify unknown concentration of Acetylcholine from Graded Dose Response curves.
- To demonstrate the general anesthetic effect on rabbits.
- To demonstrate the effect of sedatives and hypnotics on rabbits.
- To demonstrate the anti-nociceptive (analgesic) effect on mice.
- To demonstrate antidepressant effect in rats (forced swimming test, tail suspension test Yohimbin lethality test).

(Note: A minimum of 20 practicals will be conducted).

PHARMACOGNOSY-II (ADVANCED) (Theory)

Paper 3

Marks 100

1. **SEPARATION AND ISOLATION OF PLANT CONSTITUENTS:** Introduction and use of spectroscopic and chromatographic techniques for the identification of natural products. Description and interpretation of ultraviolet, infrared, mass, nuclear magnetic resonance ($^1\text{H-NMR}$ and $^{13}\text{C-NMR}$) and other advance techniques to elucidate the structure of natural products.
2. **CARBOHYDRATES AND RELATED COMPOUNDS:** Introduction and classification of carbohydrates, sugars as adjuvant in drugs, role of impurities in sugar substances.
 - (a) Sucrose and Sucrose containing drugs: Sucrose, Dextrose, Liquid glucose, Fructose, Lactose, Xylose, Caramel, Starch, Inulin, Dextrine etc.