



SHAHEED ZULFIQAR ALI BHUTTO MEDICAL UNIVERSITY

INTEGRATED CURRICULUM

For 3rd Year MBBS

Curriculum Committee

Curriculum Committee for the development of Modular System at undergraduate level of all Medical and Dental Colleges affiliated with Shaheed Zulfiqar Ali Bhutto Medical University consists of following members:

- | | | |
|-------------------------|----------|--|
| • Prof. Tanwir Khaliq | Member | Pakistan Institute of Medical Sciences |
| • Prof. Khalid Hassan | Chairman | Islamabad Medical and Dental College |
| • Prof. Zarmina Saga | Member | Rawal Institute of Health Sciences |
| • Prof. Sabiha Haq | Member | HBS Medical and Dental College |
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Modular Curriculum Development Committee

The Integrated Modules for 3rd year MBBS classes have been developed by the following faculty members:

- **DEPARTMENTS OF PATHOLOGY**

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2. Prof. Shagufta Hussain	HoD	Yusra Medical and Dental College
3. Prof. Bushra Ayaz	HoD	Yusra Medical and Dental College
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- **DEPARTMENTS OF PHARMACOLOGY**

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- **DEPARTMENTS OF FORENSIC MEDICINE**

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SHAHEED ZULFIQAR ALI BHUTTO MEDICAL UNIVERSITY

CURRICULUM FRAMEWORK: MBBS 1-5 YEARS



3rd YEAR MBBS

Year	Block – VII (12 weeks)				Block –VIII (12 weeks)			Block – IX (12 weeks)			
	Module 1	Module 2	Module 3	Exam Block I	Module 4	Module 5	Module 6	Exam Block II	Module 7	Module 8	Exam Block III
3rd Year MBBS	Foundation I	Foundation II	Hemodynamics Disorders, Hemopoietic System and lymphoid system		Endocrinology and Respiration	Cardiovascular	Reproduction and chemotherapy		GIT Skin and Musculoskeletal	Renal and nervous system	
	4 weeks	4 weeks	4 Weeks		5 Weeks	3 Weeks	4weeks		6 weeks	6 Weeks	

BLOCK I

MODULE 1

FOUNDATION- I

4 Weeks

MAIN CONTENT AREAS

PATHOLOGY

Cell injury

- Cellular adaptations
- Cell Injury & Cell Death
- Apoptosis
- Necrosis
- Intracellular accumulations

Inflammation

- Acute Inflammation
- Mediators of Inflammation
- Outcomes of Inflammation
- Chronic Inflammation
- Healing & Repair, Scar Formation, fibrosis

Immunology

- Innate and Adaptive immunity
- Cells and tissues of immune system
- Cytokines and histocompatibility molecules
- Autoimmune diseases
- Immune deficiency syndromes
- Amyloidosis
- Hyper sensitivity Reactions

Bacteriology

- Introduction to Microbiology/
- Classification of medically important bacteria
- Bacterial structure
- Bacterial genetics
- Antimicrobial drugs; Mechanism of action
- Antimicrobial drug resistance
- Pathogenesis of bacterial infections
- Bacterial Growth/ Normal flora
- Sterilization& Disinfection
- Laboratory diagnosis;
- Bacteriological Methods

- Immunological methods
- Nucleic acid based methods
- Infection control practices

MAIN CONTENT AREAS

PHARMACOLOGY

- Introduction to Pharmacology:
 - Definition and branches/divisions of Pharmacology, objectives of learning Pharmacology
- , Definition of drug, sources of drugs, structure activity relationship of drugs and drug nomenclature
- Routes of Drug Administration
 - Sources of drugs, structure activity relationship of drugs and drug nomenclature
 - Standard sources of drug information, pharmacopoeias, formularies
 - Sources & Active Principles of Drugs
 - Active principles of drugs
 - Dosage forms and doses of drugs
 - Drug administration: Routes of drug administration with their advantages and disadvantages
 - Basic principles of pharmacokinetics and mechanisms of membrane transport of drugs
 - Absorption of drugs and factors modifying absorption of drugs
 - Bioavailability, its clinical significance and factors affecting bioavailability
 - Drug reservoirs, distribution and redistribution of drugs, plasma protein binding and volume of distribution
 - Pro-drug, Biotransformation of drugs, enzyme induction and enzyme inhibition
 - Plasma half-life of drugs, steady state concentration, their clinical importance and factors affecting them
 - Principles of drug elimination/excretion, routes of drug elimination, entero-hepatic recirculation and clearance of drugs.
 - Basic principles of Pharmacodynamics: Concept of drug receptors, receptor types, signaling mechanisms of drug action
 - Concept of agonists and antagonists and their types Super-sensitivity & hypo-sensitivity/up-regulation and down-regulation of receptors.
 - Tolerance and tachyphylaxis
 - Graded dose response curve their application for determination of potency, efficacy and safety of drugs

- Graded and quantal dose response curves. Therapeutic index and therapeutic window
- Factors modifying actions and doses of drugs
- Adverse drug reactions and drug toxicity
- Pharmacogenetics
- Drug-drug interactions

PRACTICAL

- Weights and measures.
- Inter-conversions of metric and imperial systems
- Pharmacological Calculations: Introduction, stock solutions, percentage solutions and calculations for individual patients.
- Prescription Writing: General principles of prescription writing.
- Guidelines for rationale prescription and rational use of drugs Clinico-Pharmacological Seminars:

Seminars on rational prescription and rational drug therapy related to drug-drug interactions based on clinical case scenarios for:

B: Pharmacokinetic interactions:

- (i) Enzyme inhibitors and inducers
- (ii) Redistribution of drug
- (iii) Renal excretion of drug
- (iv) Hepatic re-circulation
- (v) Drug abso
- (vi) rption from different routes

B: Pharmacodynamic Interactions

- (i) Drug antagonism
- (ii) Drug synergism
- (iii) Combined toxicity

MAIN CONTENT AREAS

FORENSIC MEDICINE

- Introduction of legal medicine & jurisprudence.
- Pakistan Legal System.

- i. Powers and jurisdiction of courts.
- ii. Legal procedures.
- iii. Evidence
- iv. Important legal terms.
- v. Relevant sections of PPC.
- vi. Procedure of inquest.
- vii. Role of doctor in ML system.
- viii. Doctor's conduct in courts.
- ix. Preparation of different documents.
- x. Procedure of court attendance.
- Law related to medical man:
 - i. PM&DC (constitution, objectives, jurisdiction, registration)
 - ii. Privileges & obligation of RMPs.
 - iii. Medical ethics
 - a. Doctor patient relationship.
 - b. Doctor-doctor relationship.
 - c. Professional misconduct.
 - d. Guarding of professional secrets & privileged communication.
 - e. Consent.
 - I. Laws related
 - II. Types
 - f. Negligence
 - I. Concepts
 - II. Types
 - g. Organ transplantation ordinance & Scope of organ transplantation. (pros & cons).
 - I. Relevant section of organ transplantation act 2012
 - II. Ethical issues in organ transplantation
 - h. Biomedical research etc.

- Role of Forensic Sciences in Crime detection.

PRACTICALS

- Examination of natural & unnatural fibers, human hair & its impression.
- CSI
- Blood Stain Pattern

BLOCK I

MODULE 11

FOUNDATION-11

4 Weeks

MAIN CONTENT AREAS

PATHOLOGY

Neoplasia

- Neoplasia (Nomenclature, Benign + Malignant Tumors)
- Molecular basis of cancer
- Pathways of spread
- Tumor Suppressor genes
- Chemicals, Radiations,
- Viruses associated Carcinogenesis
- Lab diagnosis of Tumor, grading + staging

Genetics`

- Classification of Genetics Disorder
- Monogenic disorder
- Chromosomal Disorders
- Lab Diagnosis

PRACTICAL

- Dysplasia, Benign + Malignant epithelial Tumors
- Benign and Malignant Mesenchymal Tumors

MICROBIOLOGY (Virology, Parasitology Mycology)

VIROLOGY

- Introduction to Virology/ Classification of Medically important viruses
- Pathogenesis of viruses

- Host defenses against viruses /Antiviral therapy
- 4.Comparison of viruses & bacteria / Structure of viruses
- 5.Replication of viruses and genetics

PARASITOLOGY

- Classification of parasites
- General aspects of parasitology

MYCOLOGY

- Classification of Fungi
- General aspects of Mycology

PRACTICAL

- Laboratory Diagnosis of Viral infections
- Laboratory Diagnosis of fungal infections
- Laboratory Diagnosis of Parasitic infections

MAIN CONTENT AREAS

PHARMACOLOGY

- Introduction to autonomic nervous system
 - Direct-cholinomimetics/Cholinergic Drugs: Choline Esters, Cholinomimetic Alkaloids. Their mechanism of action, pharmacological actions, clinical uses, adverse effects and mushroom toxicity
 - Indirect-cholinomimetics/Cholinergic Drugs (Anticholine-Esterases): Their mechanism of action pharmacological actions and clinical uses.
 - Organophosphate (Pesticides, war gases) poisoning and its management
 - Anti-cholinergic (Anti-Muscarinic, or Atropine like drugs). Mode of action, pharmacological actions, indications and contraindications
 - Atropine toxicity (Datura poisoning) and its management.
 - Sympathomimetics/Adrenergic Drugs: Introduction to Catecholamines and non-catecholamines. Adrenergic receptor types, their site of distribution and effects
 - Mechanism of action, clinical uses, contraindications and adverse effects of Adrenaline
 - Mode of action, clinical uses, contraindications and adverse effects of other catecholamines (Nor-adrenaline, dopamine and isoproterenol).
 - Non-Catecholamines: Classification (Alpha & Beta agonists). Their pharmacological actions, clinical uses and adverse effects
 - Sympatholytic/Antiadrenergic Drugs: Introduction, mode of action and classification (Adrenergic receptor blockers, Adrenergic neuron blockers and Ganglionic blockers
 - Pharmacological actions, clinical uses, contraindications and adverse effects of α -Adrenergic receptor blockers

- Pharmacological actions, clinical uses, contraindications and adverse effects of β -Adrenergic receptor Blockers
- Mechanism of action, clinical uses, contraindications, adverse effects and toxicity of Adrenergic neuron and autonomic ganglionic blockers
 - Drugs used for treatment of glaucoma
 - Drugs for Alzheimer disease and Myasthenia gravis

PRACTICAL

- To study the effects of drugs on rabbit's eye
- To study the effects of drugs on isolated intestinal smooth muscle of rabbit
- To prepare the dose-response curve of acetylcholine on intestinal smooth muscle of the rabbit
- To study the antagonism between acetylcholine and atropine and to demonstrate surmountable/competitive antagonism
- Clinico-pharmacological seminars on rational drug therapy for:
 - (i) Treatment of glaucoma
 - (ii) Diagnosis and treatment of myasthenia gravis
 - (iii) Pharmacological management of Alzheimer disease
 - (iv) Management of organophosphate (Pesticide) poisoning

MAIN CONTENT AREAS

FORENSIC MEDICINE

- Autopsy:
 - i. Types.
 - ii. Objectives.
 - iii. Rules. (laws related)
 - iv. Autopsy Protocol.
 - v. Techniques, risks & hazards
 - vi. Procedure for PM.
 - vii. Assessment of fatal period.
 - viii. Assessment of PM interval.
 - ix. PM artefacts.
 - x. Procedure of:
 - a. Selection, preservation, labelling & despatch of biological & non-biological materials for lab examination.
 - b. Collection of relevant samples.

- Mortuary
 - I. Requirements
 - II. Refrigeration
 - III. Autopsy room requirements
 - a) Ventilation
 - b) Light
 - c) Water Supply
 - d) Sterlization
 - e) Dress of workers attached with medical colleges

- Exhumation: sections applicable, procedure, collection, preservation and despatch to lab.

- Thanatology:
 - i. Scientific concept of death.
 - ii. Brain death.
 - iii. Indicators of death.
 - iv. ML concept of sudden & unexpected death.
 - v. Cause, manner, mode & mechanism of death.
 - vi. PM CHANGES (Physiochemical changes subsequent to death in various body tissues & organs under various environmental conditions).
 - a) PM cooling
 - b) PM caloricity
 - c) Livor mortis
 - d) Rigor mortis
 - e) Cadaveric spasm
 - f) Putrefaction
 - a-Bloating
 - b -Skin slippage
 - c-Marbling
 - g) Submersion in water
 - a-Postmortem changes
 - b- Artefacts by marine animals and other means
 - c- Ante-mortem and post-mortem

- Euthanasia
 - a- Ethical problem
 - b- Active euthanasia
 - c- Passive euthanasia
 - d- Different situations

- Forensic entomology

PRACTICALS

Writing of a Death Certificate.

BLOCK 1

MODULE 3 HEMODYNAMICS DISORDERS , HEMATOPOIETIC SYSTEM and LYMPHATIC SYSTEM 4 WEEKS

MAIN CONTENT AREAS

PATHOLOGY

- Hemodynamics
- Hematopoietic
- Normal Hematopoiesis
- Classification of anemia, Iron deficiency anemia
- Anemia of Chronic disease/Sideroblastic anemia
- Megaloblastic anemia
- Aplastic anemia
- Hemolytic anemias, features, types, classification
- Thalassemia
- Sickle cell anemia
- G6PD Deficiency, Hereditary Spherocytosis
- Lymphoid system
- Autoimmune hemolytic anemia, PNH
- Introduction to leukemia
- ALL
- AML
- CML
- CLL, Multiple Myeloma
- MPDS, MDS

- Introduction and lab diagnosis of bleeding disorders
- Thrombocytopenia, ITP
- Platelet function defects
- Hemophilia
- Von Willebrand disease
- Acquired Coagulation defects
- Thrombophilia
- Nonmalignant leukocyte disorders
- LPDs, Lymphadenopathy, introduction to lymphomas
- Hodgkins Lymphomas
- NHL 1
- NHL 2
- Blood group system, Cross match
- Blood Component preparation & Storage
- Transfusion Reactions
- Bone marrow transplant

HEMODYNAMICS

- Edema
- Congestion
- Thrombosis
- Emboli,
- Infarction
- Shock

PRACTICAL

- Edema, congestion, thrombosis and infarction
- RBC Morphology, Interpretation of Blood CP, Aplastic anemia, Megaloblastic anemia
- Investigation of hemolytic anemia, Coomb's Test, Interpretation of Hb Electrophoresis
- Acute leukemias
- Chronic leukemias, MPDs, Multiple Myeloma.
- Investigation of case of Bleeding disorders, PT, APTT, BT
- Blood banking... Donor selection, Group, Cross match, Component preparation

MAIN CONTENT AREAS

PHARMACOLOGY

I- Anti-coagulant drugs: I-Parenteral Anticoagulants

Heparin, Enoxaparin & Hirudin, Argatroban. Their mode of action, clinical uses, toxicity and monitoring

II-Oral Anticoagulants

Warfarin, Phenindione & Dabigatran: Their mode of action, clinical uses, toxicity and monitoring

Thrombolytic/Fibrinolytic drugs (Streptokinase, Urokinase, Anistreplase & Tissue Plasminogen Activators): Mode of action, clinical uses &

toxicity Antiplatelet drugs: Classification (Prostaglandin synthesis inhibitors, ADP Antagonists, Glycoprotein IIb / IIIa inhibitors, & PDE5 inhibitors). Their mode of action, clinical uses, toxicity

Haemostatics (Drugs used for bleeding disorders)

Agents Used in Dyslipidemia / Hyperlipidemia

Agents used in the treatment of various types of anemia Antimalarial drugs: Introduction and classification.

Treatment, prevention and prophylaxis of *Plasmodium vivax* malaria

Treatment, prevention and prophylaxis of chloroquine resistant

Plasmodium falciparum malaria

Drugs used for different types of leukemias

Drug treatment of anaphylactic shock

Drug treatment of hypovolemic shock and other types of shocks

Practical work:

- Identification of drug formulation: Mention the group, generic name, brand name and clinical uses of given specimen of drug.

Prescription writing for:

- ✓ Treatment of anemia
- ✓ Bleeding disorder
- ✓ Treatment of dyslipidemia
- ✓ Prophylaxis treatment of MI
- ✓ Treatment of anaphylactic & hypovolemic shock

- Clinico-Pharmacological Seminars on rational drug therapy for:
 - (i) anemias (ii) Bleeding disorders (iii) dyslipidemia (iv) malaria
 - (v) leukemias

MAIN CONTENT AREAS

FORENSIC MEDICINE

- General toxicology:
 - i. Laws regulating drugs & noxious products.
 - ii. Scope of toxicology.
 - iii. Common toxicants in our environment.
 - iv. Fate & detoxification of poisons in biological tissues.
 - v. Duties of doctor in case of poisoning
 - a- Medical duties
 - b- Legal duties
 - vi. Diagnosis of toxicological cases in acute and chronic exposure in living and dead
 - vii. Classification of poisons
 - viii. General principles of treatment with anti-dotal therapy and management.
 - ix. Factors modifying action of poisons
 - x. Handling of specimen
 - xi. Causes of drug dependence
 - xii. Prepare and interpret chemical examiner report
- 2- Special Toxicology
- a-Source
 - b-Mechanism
 - c-clinical feature
 - d-Treatment
 - e-Autopsy findings
 - f-Medico legal aspects
- A. Corrosives acids
Minerals acids
- a- H₂SO₄
 - b- HCL
 - c- HNO₃

- ii- Organic Acid
 - a- Carbolic acid
 - b- Acetic acid
- B- Alkalis
 - a- NaOH
 - b- KOH
- C- Irritants
 - a- Antimony
 - b- Arsenic
 - c- Lead
 - d- Mercury
 - e- Copper
 - f- Aluminium phosphide
 - g- Phosphorous

PRACTICALS

- 1 -Biological material
 - a- Preliminary tests
 - b- Confirmatory tests
- 11- Semen
- 111-Saliva

Exam Block-I

BLOCK 11

MODULE 4 ENDOCRINOLOGY and
RESPIRATORY SYSTEM 5WEEKS

ENDOCRINOLOGY 3WEEKS

MAIN CONTENT AREAS

PATHOLOGY

- Disorders of pituitary gland
- Disorders of Thyroid gland
- Thyroiditis
- Neoplasms of thyroid
- Hyper-functioning of Adrenal cortex
- Hypo-functioning of Adrenal cortex
- Disorders of Adrenal medulla
- Disorders of Parathyroid gland
- Pathogenesis of Diabetes mellitus
- Complications and diagnosis of diabetes mellitus
- Biochemical investigations of Infertility

RESPIRATORY SYSTEM 2WEEKS

PATHOLOGY

- Atelectasis, Pulmonary Edema, Acute Lung Injury
- COPD (Emphysema + Chronic Bronchitis)
- COPD (Asthma + Bronchiectasis)
- Diseases of Vascular Origin
- Pneumonia + Lung Abscess
- Tumors of Lung
- Chronic restrictive lung disease

PRACTICALS

- Chronic Bronchitis, Emphysema, Bronchiectasis, Asthma
- Tuberculosis, Pneumonia, Lung Tumors

MICROBIOLOGY

SPECIAL BACTERIOLOGY

Bacteria causing upper respiratory tract infections

- 1 Classification of streptococci/ streptococcus pyogenes
- 2 Haemophilus influenzae

- 3 Corynebacterium diphtheriae

Bacteria causing lower respiratory tract Infections

- Streptococcus pneumoniae
- Mycobacterium / A typical Mycobacteria
- Staphylococcus aureus
- Gram negative rods causing lower Respiratory Tract Infections (E coli, Proteus, Klebsiella,
- Enterobacter, Pseudomonas Serratia)
- Miscellaneous bacteria causing lower Respiratory tract Infections Bordetella pertussis Mycoplasma pneumoniae, Legionella pneumophila, Bacillus anthracis chlamydia (C psittaci, C pneumoniae), Nocardia , Anaerobes

VIROLOGY

- Viruses causing upper respiratory tract infections (Rhinoviruses viruses, Corona viruses, Respiratory Syncytial virus(RSV) Adenoviruses, Enteroviruses)
- Viral Infections of lower respiratory tract, Mumps, Influenza, RSV, Parainfluenza, Rhinoviruses viruses, Corona viruses
- Atypical pneumonia

PARASITOLOGY

- Parasites causing Respiratory tract infections (Ascaries, Pneumocystis carinii, others)

MYCOLOGY Systemic mycosis

- Fungal Infections of respiratory tract

PRACTICALS

- Ziehl-Neelson staining technique
- Tuberculin Test

PHARMAC`OLOGY

MAIN CONTENT AREAS

- Pharmacology of hypothalamic releasing factors and related drugs
- Pharmacology of Growth hormone (Somatotropin) and its antagonists
- Therapeutic used and adverse effects of prolactin

- Pharmacology of Thyroid hormones, triiodothyronine (T₃) & tetraiodothyronine / thyroxine (T₄), and treatment of hypothyroidism
- Drugs for treatment of hyperthyroidism & thyroid storm
- Drugs affecting bone mineral homeostasis, bisphosphonates, vitamin-D
Introduction to adrenocorticosteroids and mineralocorticoids
- Glucocorticoids & their antagonists
- Introduction to anti-diabetic drugs
- Types, mode of action and adverse effects of insulin
- Oral antidiabetic agents (Sulfonylureas, biguanides, etc.)
- Introduction to antiasthmatic drugs, bronchodilators (relievers)
- Anti-inflammatory agents for asthma (controllers), management of status-asthmaticus
- Classification, mode of action and adverse effects of anti-tussives
- Mode of action and adverse effects of expectorants and mucolytics
Pharmacology of Histamine and histamine H-1 blockers
- Drugs for community acquired pneumonia (Macrolide antimicrobial drugs)
- Drugs used in Tuberculosis (first line therapy)
- Second Line / Alternative Drugs used in tuberculosis.
- Pharmacology of drugs used for treatment of leprosy
- **Practical work:**
- Identification of drug formulations related to endocrinology and respiratory system:
- Mention the group, generic name, brand name and clinical uses of given specimen of drug.
- Prescription writing for:
- Diabetes mellitus type-1 & type-2
- Osteoporosis
- Hypothyroidism & Thyrotoxicosis
- Acute streptococcal pharyngitis & Allergic rhinitis
- Bronchial asthma & Pneumonia
- Clinico-Pharmacological seminars on rational drug therapy for: (i)
treatment of hypothyroidism (ii) treatment of hyperthyroidism (iii)
management of osteoporosis (iv) asthma (v) treatment of pneumonia, (vi)
management of prophylaxis of tuberculosis and

- pharmacological treatment of allergic reactions

FORENSIC MEDICINE

MAIN CONTENT AREAS

- Traumatology
 - a. Mechanism of wound production
 - b. Mechanical injuries
 - c. Abrasions.
 - d. Bruises
 - e. Laceration.
 - f. Incised
 - g. Stab wound
 - h. Age of the wound
 - i. Cause of death in wound
 - j. Ante-mortem and post-mortem wounds
 - k. Defense wounds
 - l. Self inflicted wounds
 - m. Fabricated wounds.
- Qisas and Diyyat Ordinance
 - a- According to body parts
 - b- Manner of infliction
 - c- Others
 - d- Qatal
 - 1-Qatal e amad
 - 2-Qatal e khata
 - 3-Qatal e shaba amad
 - 4- Qatal e bisabab
 - e- Isqat e hamal
 - f- Isqat.e jenin
 - g- Qisas
 - h- Diyyat
 - i- Daman
 - j- Tazir
 - k- Mohsin
 - l- Gairmohsin
- Internal ballistic
 - a- Classification of firearms
 - b- Types of missile
 - i-Fully jacketed
 - ii-Half jacketed
 - iii-Non- jacketed
 - iv- Other types
 - c- Internal ballistic

- d- Products of fire
- e- External ballistic
 - i-Wobbling
 - ii-yaw
 - iii-Tumbling of bullets
 - iv- Ricochet
- f- Shotgun
 - a- Mechanism and choking
 - b- Cartridge
 - c- Products of fire
 - d- Wound production
 - e- Range of fire
- g-Terminal ballistics(rifled firearm injuries)
 - i-entry wound
 - ii-Range of fire
 - iii- Angle of fire
 - iv-Wound cavity
 - a- Temporary
 - b- Permanent
 - v- Exit wound
 - a- Identification
 - b- Shored exit wound
- h-Explosives Injuries
 - a- Mechanism
 - b- Effect at different distance
 - c- Effect of hollow and solid organs

PRACTICALS

1. Blood stain pattern
2. Crime scene investigation

BLOCK II

MODULE 5 CARDIOVASCULAR SYSTEM

3 WEEKS

MAIN CONTENT AREAS

PATHOLOGY

- Atherosclerosis: risk factors , morphology and complications
- Vasculitis
- Vascular tumors
- Congenital Heart diseases
- Ischemic heart disease
- Diagnosis of Myocardial infarction
- Rheumatic heart disease
- Infective endocarditis
- Cardiomyopathies

MICROBIOLOGY

Special Bacteriology

- Bacteremia and Septicemia

Bacterial Endocarditis

- Viridans streptococci
- Enterococci
- Staphylococcus epidermidis
- Pseudomonas aeruginosa
- Toxic shock syndrome (Staphylococcus aureus, streptococci)

Myocarditis

- Coxsackie viruses,
- Cytomegalovirus
- EB virus, Parvovirus

- Influenza virus
- Trypanosoma crusei
- Trichinella spiralis

Pericarditis

- Coxsackie viruses
- Echo virus
- HIV virus
- Cytomegalovirus
- Streptococcus Pneumonia
- Staph Aureus
- Mycobacterium Tuberculosis
- Histoplasma Capsulatum

- Coccidioides Immitus

VIROLOGY

- (HIV) virus infection
- (Acquired immunodeficiency syndrome)
- Dengue fever
- Viral hemorrhagic fevers

PARASITOLOGY

- Malaria
- Leishmaniasis
- Trypanosomiasis

PRACTICAL

- Diagnosis of Malaria
- Diagnosis of Leishmania
- Blood Culture
- Hodgkins and Non Hodgkin's lymphomas

PHARMACOLOGY MAIN CONTENT AREAS

- Introduction to anti-hypertensive drugs and pharmacology of sympathoplegics used for hypertension
- Angiotensin Converting Enzyme (ACE) inhibitors/Angiotensin-II receptor blockers (ARBs) for treatment of hypertension
- Calcium channel blocking drugs and other vasodilators used in hypertension
- Introduction to anti-anginal drugs and pharmacology of nitrates
- Pharmacology of calcium channel blockers and β -adrenoceptor blockers in angina pectoris and newer antianginal drugs
- Introduction to anti-arrhythmic drugs and pharmacology of class-I class V anti-arrhythmic drugs
- Mode of action, therapeutic uses and adverse effects of classes-II to V anti-arrhythmic drugs
- Introduction to drugs used in chronic heart failure and use of diuretics in heart failure

- Mechanism of action, pharmacological effects and toxicity of cardiac glycosides
 - Management of acute heart failure Introduction to diuretics and pharmacology of thiazide diuretics
- Pharmacology of loop diuretics, potassium sparing diuretics and osmotic diuretics
- **Practical work:**
 - To study the effect of drugs in frog's heart
- To study the effect of drugs on blood vessel of frog

Identification of drug formulation:

Mention the group, generic name, brand name and clinical uses of given specimen of drug.

Prescription writing for:

- ✓ Essential hypertension
- ✓ Malignant hypertension
- ✓ Cardiac failure
- ✓ Angina pectoris Clinical Seminars:

Clinico-Pharmacological seminars on rational drug therapy for:

(i) Management of hypertension (ii) pharmacology of angina pectoris (iii) management of acute and chronic heart failure (iv) management of cardiac arrhythmias

FORENSIC MEDICINE

MAIN CONTENT AREAS

- Regional injuries
 - n. Head injuries:
 - i. Mechanism of head injuries.
 - ii. Fractures.
 - iii. Coup & counter coup.
 - iv. Concussion.
 - o. Neck:
 - i. Fractures.
 - ii. Whiplash injuries.
 - iii. Concussion.

- p. Vertebral column.
 - i. Fractures
 - ii. Railway spine.
 - iii. Concussion.
- q. Chest.
- r. Abdomen.
- s. Limbs.
- t. Bones & joints.
- Transportation injuries.
 - a. Acceleration.
 - b. Deceleration.
 - c. Injuries by air bag.
 - d. Bikers injuries.
 - e. Pedestrian injuries.
- Police torture.
 - a. Physical.
 - b. Psychological.
 - c. After effects.
- Deaths in custody.

(Practical)

- Collection of viscera in autopsy, Sealing & dispatching of viscera during autopsy.

BLOCK II

MODULE 6 REPRODUCTION AND CHEMOTHERAPY 4 WEEKS

MAIN CONTENT AREAS

PATHOLOGY

- **FGS**
- Normal Anatomy
- Lesions of Vagina and Cervix

- Inflammations, Hyperplasia
- Adenomyosis, Endometriosis
- Uterine Tumors
- Non – Neoplastic Ovarian lesions and Surface epithelial tumors
- Germ cell & Stromal tumors of ovary
- Gestational and Placental disorders

PRACTICALS

- Squamous cell Ca / CIN of Cervix, Endometrial Carcinoma, Hyperplasia (Uterus)
- Ovarian Tumors

BREAST

- Normal Structure, Development disorders,
- Inflammations
- Benign Epithelial lesions (FCD, Papilloma, Proliferative lesions)
- Fibroadenoma, Phyllodes tumor
- Breast Carcinoma (Classification and histological types)
- Risk factors of breast carcinoma
- Prognostic factors, Pathology of male breast

PRACTICALS

- Fibro adenoma, Fibrocystic disease
- Breast Carcinoma

MGS

- Congenital Anomalies of testis testicular Atrophy, Undescended testes,
- Torsion
- Testicular tumors

- Benign Prostatic hyperplasia

- Carcinoma Prostate

PRACTICALS

- Testicular tumors
- BPH
- Ca Prostate

MICROBIOLOGY

- **Bacteriology**
- Syphilis

- Gonococci
- Sexual transmitted diseases

PELVIC INFECTIONS

GENITAL ULCER DISEASE

- Hemophilus duceryi, HSV-2,
- Treponema pallidum,
- Chlamydia trachomatis L123
- klebsiella granulomatous

VAGINITIS

- Vulvovaginal candidiasis,
- Trichomoniasis,

- Bacterial vaginosis (Gardnerella vaginalis, anerobes like mobiluncus),

CERVICITIS

- Chlamydia trachomatis D –K

- Neisseria gonorrhoeae,
- HSV
- Trichomonas

PID

- Neisseria gonorrhoeae,
- Chlamydia trachomatis

URETHRITIS

- Neisseria gonorrhoeae
- Chlamydia trachomatis
- Trichomonas

PROSTATITIS

- Enterobacteriaceae (e.g Proteus species, E.coli ,)
- Pseudomonas
- Chlamydia trachomatis ,
- Neisseria gonorrhoeae.

VIROLOGY

- Genital warts, Genital herpes and genital ulceration
- Hepatitis B , C and HIV infections

PARASITOLOGY, MYCOLOGY

- Vulvovaginal candidiasis
- Trichomoniasis

PRACTICAL

- Examination of effusions
- **MGS**
- Chancroid (*Haemophilus ducreyi*)
- Lymphogranuloma venereum (*Chlamydia trachomatis* serovars L1-3-)
- Granuloma inguinale (*Klebsiella granulomatis*)

PHARMACOLOGY

MAIN CONTENT AREAS

- Male sex hormones: Androgens, anabolic steroids and anti-androgens
- Treatment of male infertility and erectile dysfunction
- Female sex hormones: Ovarian hormones (estrogen, progesterone) and their inhibitors/antagonists
- Treatment of female infertility and orgasm disorder
- Drugs affecting uterine motility: Oxytocic and Tocolytic drug Contraceptives
- Introduction to chemotherapy
- Inhibitors of bacterial cell wall synthesis (Beta lactam drugs: Penicillins) Inhibitors of bacterial cell wall synthesis (Cephalosporins & cephamycins Inhibitors of bacterial cell wall synthesis
- (Non-beta lactam drugs: Vancomycin) and related drugs for MRSA Protein synthesis inhibitors, tetracyclines & chloramphenicol Sulfonamides
- Aminoglycosides
- Fluoroquinolones
- Systemic and topical antifungal drugs, Nystatin, etc

- Introduction to Anti-viral agents and drugs for treatment of Herpes, CMV, influenza and hepatitis B & C viral diseases
- Anti-retroviral therapy: Treatment of HIV infection and dengue fever treatment
- Introduction to cancer chemotherapy: Classification, log-cell kill hypothesis and resistance to chemotherapeutic agents, etc
- Cancer chemotherapy: Alkylating agents and antimetabolites
- Cancer Chemotherapy: Vinca alkaloids, anti-cancer antibiotics and platin compounds
Cancer chemotherapy: Hormone related compounds, monoclonal antibodies and other anticancer agents
- **Practical work:**
- **Identification of drug formulation:** Mention the group, generic name, brand name and clinical uses of given specimen of drug.
- **Prescription writing for:**
- Upper respiratory infection
- Oral candidiasis
- Typhoid fever
- HIV infection
- Herpes simplex viral infection
- **Clinico-Pharmacological seminars on rational drug therapy for:** (i) management of male & female infertility
- uses of contraceptives
- treatment of Herpes, CMV, influenza and hepatitis B & C viral diseases (iv) treatment of candidiasis and (v) other bacterial infections

MAIN CONTENT AREAS

FORENSIC MEDICINE

- Sexual offences:
- Natural.
 - a. Relevant laws.
 - b. Impotency.
 - c. Sterility.
 - d. Certification of impotency.
 - e. Virginitv.
 - i. True.
 - ii. False.
- Procedure of examination.
 1. Victim.
 2. Assailant.
 3. Collection of trace evidence.
 4. Mandatory samples.
 1. Collection.
 2. Preservation.
 3. Sending to lab.
 5. Reporting.
- Unnatural sexual offences.
 1. Sodomy.
 2. Oral coitus.
- Procedure of examination.
 1. Victim.
 2. Assailant.
 3. Collection of trace evidence.
 4. Mandatory samples.
 1. Collection.
 2. Preservation.
 3. Sending to lab.
 5. Reporting.
- Pregnancy.
 1. True.
 1. Presumptive.
 2. Probable.
 3. Confirmatory.
 2. False.
- Miscarriage.
- Abortion:
 1. Examination with relevant sections.
 - a. ML aspect applicable.
 - b. Examination of mother
 - c. Aborted material.
 - d. Preservation.

- e. Dispatch to lab.
- Criminal abortion.
 - a. Law.
 - b. Different Methods.
 - i. Skilled.
 - ii. Semi-skilled.
 - iii. Unskilled.
- Ethics and laws of therapeutic abortion.
- Artificial insemination.
 - 1. Ethical issues.
- Common sexual perversions & their causes.
- Relevant section, (Zina & Hadood Ordinance).
- Crime against newborn:
 - a. Infanticide.
 - a. Live birth.
 - b. Born dead.
 - b. Battered baby.
 - a. Identification.
 - b. Cinderella syndrome etc.
 - c. SID.
 - a. Cot deaths.
 - b. Laying over etc.

(Practical)

- 1. Analytical toxicology;
 - a. Identification of volatile substances.
 - b. Identification of organic substances.
- Identification of inorganic substances

EXAM BLOCK 11

BLOCK III

**MODULE 7 GASROINTESTINAL TRACT and
SKIN MUSCULOSKELETAL 6 WEEKS**

MAIN CONTENT AREAS

PATHOLOGY

GIT

- Lesions of Oral cavity
- Lesions of Salivary glands
- Esophagus (Anatomy, Achalasia, Hiatal hernia, diverticula, lacerations, varices, esophagitis, Barrett's)
- Infections + Chemical Esophagitis, tumors, of esophagus
- Stomach (Anatomy, Congenital anomalies, acute gastritis, chronic gastritis, autoimmune gastritis)
- Peptic ulcer, gastric ca
- Anatomy of Intestine, congenital anomalies, Meckel's diverticulum
- Enterocolitis
- Malabsorption
- Idiopathic inflammatory bowel disease
- Vascular disorders, diverticular disease, intestinal obstruction
- Tumors of small + Large intestine
- Appendix

Liver

- Anatomy of liver + jaundice
- Cirrhosis
- Viral Hepatitis
- Autoimmune Hepatitis, Drug induced liver disease, Metabolic liver disease
- Intrahepatic biliary disease

- Liver nodules and Tumors

Gall Bladder

- Anatomy of Gall Bladder, Cholecystitis
- Disorders of extra hepatic bile duct and tumors
- Gall stones

PANCREAS

- Anatomy, Congenital Anomalies
- Acute Pancreatitis
- Chronic Pancreatitis, Cysts of Pancreas,
- Neoplasms

PRACTICALS

- Acute + Ch. Gastritis
- Gastric Carcinoma
- Ulcerative Colitis, Crohns Disease
- Fatty liver
- Cirrhosis of liver
- Colon ca
- Polyps

MICROBIOLOGY

Special bacteriology

Bacteria causing GIT infections

- Salmonella
- Shigella

- Vibrio cholera
- Escherichia Coli
- Helicobacter pylori
- Campylobacter jejuni
- Other organisms causing Food Poisoning
- Staphylococcus aureus
- Gram positive rods
- Bacteroides fragilis

PARASITOLOGY

- Protozoa Causing Intestinal Infection
- Cestodes
- Nematodes
- Trematodes.

VIROLOGY

- Viral hepatitis
- Viruses causing intestinal infections

PRACTICAL

- Stool routine examination

SKIN MUSCULOSKELETAL (SMS) 2WEEKS

MAIN CONTENT AREAS

PATHOLOGY

Skin

- Chronic inflammatory dermatoses + blistering diseases
- Pre – Malignant lesions of skin, naevi, malignant tumors of skin

MUSCULOSKELETAL SYSTEM

- Metabolic bone diseases
- Infections of bone, Congenital lesions
- Tumors of cartilage
- Tumors of bone
- Osteoarthritis
- Rheumatoid Arthritis
- Gouty Arthritis

PRACTICALS

- Bone Tumors
- Skin tumors

SPECIAL BACTERIOLOGY

Skin and Soft tissues

- Staphylococci
- Streptococci

Causes of skin and soft tissue infections and their associated risk factors. SGD----2

- Animal bite (cat and dog)---Pasteurella multocida, Capnocytophaga canimorsus

- Human bite-----Eikenella corrodens
- Contact with fish ,crabs; Erysipelothrix rhusiopathiae
- Exposure to fresh water ; Aeromonas hydrophila
- Exposure to brackish /salt water; Vibrio vulnificus
- Exposure to unchlorinated water in hot tub; Pseudomonas aeruginosa
- I/V drug use; Staphylococcus aureus , Enteric Gram negative rods like serratia, pseudomonas, clostridium botulinum
- Exposure to soil caused by military trauma or vehicle accident ;clostridium perfringens
- Surgery; Staphylococcus aureus, Streptococcus pyogenes
- Young children; Hemophilus influenzae type –b
- Severe burn wound; Pseudomonas aeruginosa
- Decubitus ulcer /diabetic foot ulcer; Staphylococcus aureus, Enteric Gram negative rods & Anaerobes and often polymicrobial.
-

2 Skin Abscess, furuncle and carbuncle

- Staphylococcus aureus, Beta hemolytic Streptococci
- Mycobacterium tuberculosis
- Non tuberculous mycobacteria
- Coccidioides mycosis
- Candida
- Cryptococcus

3 Necrotizing soft tissue infections (Necrotizing fasciitis/Myonecrosis Type -1 Nectrozing fasciitis polymicrobial ;

- Clostridium perfringens

BONE AND JOINT INFECTIONS

- Community acquired MRSA
- Vibrio vulnificus in brackish water
- Aeromonas in fresh water

OSTEOMYELITIS

- Staphylococcus aureus
- Mycobacterium tuberculosis (Pott's disease)
- Staphylococcus epidermidis (hip or knee prosthesis)
- Propionobacterium acne
- Pseudomonas ,serratia , candida (in i/v drug users)

Osteomyelitis in cat bite

Pasteruella multocida

Osteomyelitis in Sickle cell anemia

Salmonella species

Fungal osteomyelitis

Coccidioides immitus,
Histoplasma capsulatum

ORGANISMS CAUSING INFECTIOUS ARTHRITIS

- Neonates
Streptococcus agaalctiae
- Children and adults
Staph aureus
- Sexually active adults
Neisseria gonorrhoeae
- Prosthetic hip and knee joint
S. aureus
Staphylococcus epidermidis
- Intravenous drug users
- Staphylococcus aureus
Pseudomonas aeruginosa

REACTIVE ARTHRITIS

- Campylobacter
- Shigella
- Salmonella
- Yersinia

- Chlamydia
- **Rheumatic fever**
Streptococcus pyogenes

VIRAL (IMMUNE COMPLEX) ARTHRITIS;

- Rubella virus (natural infections & immunization)
- Parvovirus B -19
- Chronic Hepatitis C
 - IV. Hepatitis B
 - Arbovirus (Dengue virus)

MAIN CONTENT AREAS

PHARMACOLOGY

- Drugs used in acid–peptic ulcer diseases (Proton pump inhibitors, etc.)
- Drugs neutralizing gastric acid (Antacids), mucosal protective agents and drugs for eradication of *H. Pylori*
- Prokinetic agents
- Anti-diarrheal drugs
- Pharmacology of Inflammatory bowel disease (IBD) & Irritable bowel syndrome (IBS)
- Laxatives /Purgative /Cathartics
- Emetic & anti-emetic drugs
- Introduction of drugs for treatment of luminal amebiasis (amoebic dysentery and amoebic liver abscess) and pharmacology of metronidazole
- Pharmacology of other amebicides (extra luminal and luminal amebicides)
- Drugs acting against roundworm infections (Nematodes)
- Drugs acting against flukes, e.g. schistosomal infections (Trematodes) Drugs acting against tapeworm infections (Cestodes)
- Drugs for treatment of leishmaniasis
- Introduction to non steroidal anti-inflammatory drugs (NSAIDs) and pharmacology of aspirin and other salicylates
- Mechanism of action, adverse effects and therapeutic indications of NSAIDs other than Aspirin (Non-selective and selective COX-inhibitors Mechanism of action, adverse effects and therapeutic indications and toxicity of acetaminophen (Paracetamol)

- Introduction to drugs used in musculoskeletal disorders and drugs used in osteoarthritis (Systemic and topical)
- Drugs used in Rheumatoid arthritis including Disease Modifying Anti-Rheumatic Drugs (DMARDs)
- Drugs used to treat gouty arthritis

- Introduction to skeletal muscle relaxant drugs and pharmacology of centrally acting muscle relaxants. Mechanism of action, clinical uses and adverse effects of peripherally acting muscle relaxants
- Pharmacology of Ergot Alkaloids
- Pharmacology of Nitric Oxide (NO) and Eicosanoids (Prostaglandins, etc.) Serotonin (5-HT), its agonists & antagonists
- Vasoactive Peptides
- Migraines and other types of headaches
- Drug treatment of common skin conditions
- **Practical work:**
- Identification of drug formulation:
- Mention the group, generic name, brand name and clinical uses of given specimen of drug. Prescription writing for:
- Diarrheas
- Ascariasis
- Scabies
- Dyspepsia
- Gastro-Esophageal Reflux Disease (GERD)
- Management of dengue fever

- Clinico-Pharmacological seminars on rational drug therapy for:
- Management of peptic ulcer disease
- Management of GERD
- Treatment of Amoebic dysentery & Amoebic liver abscess
- Management of Rheumatoid arthritis & Osteoarthritis
- Role of skeletal muscle relaxants in anesthesia, ECT, etc.
- Management of Gouty arthritis
 - Management of Schistosomiasis

MAIN CONTENT AREAS

FORENSIC MEDICINE

- Asphyxia:

1. Definition and classification
 2. Pathophysiological of asphyxial death
 3. Mechanical asphyxial deaths
- Hanging
 - Suicidal
 - Homicidal
 - Accidental
 - Judicial
 - Mechanism and cause of death in hanging
 - Strangulation
 - Ligature
 - Manual
 - Suffocation
 - Throttling
 - Gagging
 - Choking
 - Smothering
 - Garroting
 - Bans-Dola
 - Traumatic Café Coronary
 - Auto erection asphyxia
 - Anoxia and its types
 1. Anoxic anoxia
 2. Stagnant anoxia
 3. Histotoxic anoxia
 - Drowning
 1. Mechanism
 2. Fresh water
 3. Sea water
 4. Dry drowning
 5. Wet drowning
 6. Ante mortem
 7. Post mortem
 8. Wet submarino
 9. Dry submarino
 - Pathological signs of violent asphyxia deaths
 1. ML implications
 - Asphyxiants
 - Chemical
 - CO
 - CO₂
 - H₂S
 - HCN
 - Environmental (vitiated air)
 - ML implications
 - Petroleum products (kerosene oil) poisoning

- Poisonous plants:
 - a. Aconite.
 - b. Belladonna & hyoscyamus.
 - c. Datura.
 - d. Ergot.
 - e. Nux vomica.
 - f. Tobacco.
 - g. Calotropis.
 - h. Oleander.
 - i. Cardiac poisons (plant origin).
 - a. Tobacco.
 - b. Digitalis.
 - j. Abrus precatorius.
 - k. Castor oil.
 - l. Croton oil.
 - m. Arrow poisons and ML importance.
 - n. Mushrooms.

(Practical)

- Reinsch's test.
- Chromatography.
- Glass identification.
- Detection of drugs of abuse.
- Consent taking.
- Suturing of wounds.
- Intravenous injections.

BLOCK III

MODULE 8 RENAL AND NERVOUS SYSTEM 6 WEEKS

MAIN CONTENT AREAS

PATHOLOGY

- Nephritic Syndrome

- Glomerular Diseases
- Acute Tubular injury, Acute tubular necrosis
- Renovascular disease, Hypertension
- Pyelonephritis
- Tumors of Kidney
- Tumors of Urinary bladder
- Renal Function Test, Renal Failure
- Congenital Anomalies of Kidney
- Cystic disease of Kidney
- Diabetic, Amyloid & Multiple myeloma Nephropathy
- Obstructive Uropathy / Hydronephrosis
- Cystitis
- Proteinuria

PRACTICALS

- Chronic Glomerulonephritis / End Stage Kidney,
- Tumors of Kidney

MICROBIOLOGY

- Enteric Gram Negative rods

1 Organisms causing Cystitis /Pyelonephritis /Asymptomatic Bacteriuria

- (Ecoli,Klebsiella ,Proteus, Pseudomonas aeruginosa, Enterococcus, Staph saprophyticus, Candida sp,adenovirus, Cytomegalovirus and Parasites (Shistosoma hematobium)

PRACTICALS

- 1.Urine Routine Examination
- 2.Urine culture

NERVOUS SYSTEM

- Cerebrovascular diseases
- Demyelination & degenerative diseases
- Intra cranial tumors
- Peripheral nerve tumors

PRACTICALS

- CNS Tumors

SPECIAL BACTERIOLOGY

- Bacterial Meningitis,
- Neisseria meningitidis/
- Hemophilus influenza,
- Organisms causing meningitis/Brain abscess
- With various predisposing factors

VIROLOGY

- Viral meningitis
- Polio virus
- Rabies Virus
- Viruses causing Encephalitis with various predisposing factors

PARASITOLOGY

- Parasitic meningitis,

MYCOLOGY

- Fungal meningitis

PRACTICAL

- Laboratory Examination of Cerebrospinal fluid

**PHARMACOLOGY (RENAL)
MAIN CONTENT AREAS**

- UTI treatment drugs (quinolones, aminoglycosides, sulfonamides, tetracycline)
- Revisit Diuretics, SIADH, Benign Prostatic Hyperplasia, Vasopressin

PHARMACOLOGY (RENAL AND NERVOUS SYSTEM)

MAIN CONTENT AREAS

- Pharmacology of urinary tract infection
- Syndrome of inappropriate anti-diuretic hormone (SIADH), management of benign prostatic hyperplasia (BPH)
- Introduction to Pharmacology of Central Nervous system and neurotransmitters in CNS
- Classification of sedative & hypnotic drugs and Pharmacology of Benzodiazepines us System drugs, including neurotransmitters of CNS Pharmacology of Barbiturates and other sedative-hypnotic drugs
- Alcohol (Acute and chronic alcoholism)
- Introduction, pharmacokinetics, mode of action and classification of General Anesthetic drugs
- Pharmacology of Intravenous and inhalational general anesthetics
- Pre-anesthetic medication
- Pharmacology of local anesthetics
- Introduction to antipsychotic drugs and Pharmacology of typical antipsychotics
Pharmacology of newer (Atypical) anti-schizophrenic drugs

- Clinical Pharmacology of mania and bipolar affective disorders
- Introduction and classification of Antidepressant drugs and Pharmacology of Tricyclic Antidepressants (TCAs)
Pharmacology of selective serotonin reuptake inhibitors (SSRIs) and others antidepressant agents
- Clinical pharmacology of mania and other bipolar effective disorders
- Introduction and classification of drugs for Parkinsonism and Pharmacology of levodopa, Carbidopa and other dopaminergic drugs
pharmacology of COMT, MAO and muscarinic receptors inhibitors for treatment of parkinsonism
Introduction and classification of anti-seizure drugs.
Mode of action, therapeutic uses and adverse effects of classical antiepileptics (Phenytoin, Carbamazepine, sodium valproate and ethosuximide). Mode of action, therapeutic uses and adverse effects of newer antepileptic drugs (gabapentin, vigabatran, topiramate) Pharmacology of Xanthines and other CNS stimulants
- Pharmacology of other degenerative diseases and Alzheimer's disease
- Introduction and classification of Opioid (Narcotic) analgesics. Their mode of action and pharmacological effects
- Clinical uses and adverse effects of opioid analgesics
- Opioid abuse, dependence, withdrawal, overdose-toxicity; and their management Pharmacology of miscellaneous drugs of abuse and dependence

Practical work:

- To study the effects of drug on reflex time in frog
- To study the effects of CNS stimulant/depressant drugs in frog

Prescription writing for:

Urinary Identification of drug formulations:

Mention the class of drug of the specimens provided.

- ✓ tract infection
- ✓ Epilepsy
- ✓ Major depressive disorder

Clinico-Pharmacological seminars on rational drug therapy for:

- (i) Management of major depressive disorder MDD
- (ii) Pharmacological treatment of schizophrenia
- (iii) Management of severe pain (Angina, pleuritic, etc.)
- (iv) Management of epilepsy
- (v) Pharmacological treatment of insomnia & anxiety

FORENSIC MEDICINE**MAIN CONTENT AREAS**

- Identification:
 - a. Parameters.
 - b. Methods of identification.
 - c. Medico-legal Importance of different ages.
 - d. Identification in mass disasters.
- Forensic psychiatry.
- Mental health ordinance.
- Neurotics.
 - a. Alcohol. (Ethanol, methanol).
 - b. Opium: (opiates, opioids & other narcotics).
 - c. Cocaine and cannabis
- Head injuries
- DNA profiling
- Hypnotics and sedatives
- Ethics of therapeutic abortions and artificial insemination
- Medical evidence and witness
- Ethical issues in organ transplant and organ transplant act
- Identification of bones
- Forensic odontology

- Finger printing
- Examination of alcoholics
- Salicylates and paracetamol

- Curare.
- Conium.
- Organophosphorus.
- Common household poisons.
- Petroleum products..
- Thermal injuries;
 - a. Dry heat burns.
 - b. Scalds.

- Heat exhaustion & Heat stroke.
- Hypothermic deaths & injuries.
- Electrocution & lightening.

(Practical)

1. Death certificate.
2. Medical & other certificates.
3. Finger printing.
4. DNA profiling.
5. Trace evidence.
6. Identification of bones.
7. Forensic odontology.
Examination of alcoholics

EXAM BLOCK 111