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1st YEAR
PHARMACIST / MEDICAL ASSISTANT

**ANATOMY & PHYSIOLOGY, PUBLIC
HEALTH & HYGIENE, DISEASES ETC.**

S.No.	Topics
1.	Elementry Physics and Chemistry.
2.	Characteristics of living matter.
3.	The structure of living matter.
4.	The Tissues
5.	Systems and various parts of human body.
6.	Development and types of Bones
7.	Bones of Head & Trunk
8.	Joints and Articulaions
10.	Structure and Action of Muscles
11.	The Chief Muscles of the Body
12.	The Blood
13.	The Heat and Blood Vessels
14.	The Circulatory System
15.	The Lymphatic System
16.	The Respiratory System
17.	The Digestive System
18.	The Liver, Biliary System and Pancreas
19.	Nutrition and Metabolism
20.	Endocrine Glands and Exocrine Glands
21.	The Urinary System
22.	The Nervous System
23.	The Ear
24.	The Eye
25.	The Skin
26.	The Reproductive System Etc.
27.	Naional Health Programmes

PUBLIC HEALTH & HYGIENE

Public Health:- History and Development, modern concept of public health and comprehensive health care. Various Health Committees and their recommendation. Five year Plans priorities, allocation for medical and Health Services. Cost analysis of medical and health care. Health and Family Planning Organisations setupt at the National, the State, the District and Block, Levels functions of Primary Health Centre.

BASIC MEDICAL INFORMATION, DRUGS & ANTIBIOTICS (Their Preparation & Uses)

BASIC MEDICAL INFORMATIONS, DRUGS & ANTIBIOTICS (Their Preparation & Uses)

1. Kinds of drugs, characteristics of drugs, Balsems, Gums, etc.
2. Pharmaceutical Process and methods.
3. General directions on dispensing, weighing and measuring. How prescriptions are written, prescription reading. How to calculate doses, weights and measures, formulae for converting from one scale to another, abbreviations used in prescriptions.
4. Doses of drugs, pharmacoepial preparation and their doses, incompatibility, physical, chemical physiological and therapeutical.
5. Suppositories:- How to prepare suppositories of

- 3
- special medicines, pessaries, bougies, plasters etc.
6. Ointments, Spray solutions or Nebulas, Inhalations, General rule about preparation of Mixtures.
 7. Ordinary bazar medicines, their recognition, doses and uses.

RECORDS KEEPING

STORES RECORDS & PROCEDURES: Clerical procedure in the good. Inward section Records and procedures in main stores; classification and condification; Keeping of stocks books, preparation of indent and methods of storing drugs.

FIRST-AID & HOME NURSING; HEALTH EDUCATION (Including) DIFFERENT TYPES OF BANDAGES, EMERGENCY HEALTH-CARE SERVICES, STERILIZATION PROCESS & DISINFECTION PROCEDURES

FIRST-AID & HOME NURSING, HEALTH EDUCATION, DIFFERENT TYPES OF BANDAGES & EMERGENCY HEALTH-CARE SERVICES

FIRST AID TO THE INJURED;

Introduction and history of the Red-Cross.

- a. Outline of the First - Aid
- b. Structure and functions of the body.

- c. Dressing and Bandages (use of Triangular Bandages and Cotton Roller Bandage, Rubber Bandage and different types of Dressing).
- d. Cardio-pulmonary resuscitation
- e. Wounds.
- f. Haemorrhage
- g. Shock
- h. Electric Stock
- i. Different methods of artificial respiration
- j. Asphyxia.
- k. Fractures and Dislocation
- l. Unconsciousness and Fainting
- m. Epilepsy and Hysteria
- n. Poisons including food Poisoning
- o. Common conditions:
 - Foreign body in ear, eye and nose

- Cramps
- Frost - Bite
- Bites and Stings etc.
- Epistaxis
- Snake Bite
- Dog Bite

p. Transport of injured persons

Use of common medicines.

PRACTICAL: Treatment of fractures, strains and sprains and application of splints. The triangular bandage and its application, and loading and unloading of casualties, Hand - seats and lifting methods, recorders maintenance of First - Aid Post, CPR etc.

Home Nursing

Introduction to Home Nursing.

- a. Nurse
- b. Sick Room
- c. Bed Making
- d. Patient's Toilet

- e. Observation of the Sick
- f. Infection
- g. Surgical Technique
- h. Diet
- i. Medicines
- j. Special Conditions & Treatments
- k. Bandaging
- l. Further Observations
- m. Immunity & Infectious Diseases
- n. Care of the Aged and Long-term Patient/Person
- o. Care of the Mentally-ill Healthy Patient
- p. Special Drugs-their Control & Administration
- q. Preparation of the Patient for Operation and the after care
- r. Shock and Blood Transfusion
- s. Special Treatment
- t. Nursing in Special Diseases
- u. The Hospital Services
- v. Preparation for Special Treatment
- w. Child-Birth and its Management

PRACTICAL:- The roller bandage and its application. The Sick room choice, lighting, cleaning & preparation. Ventilation & Warming. The Bed-Making, Beds for Special Cases Details of Nursing, Washing the Patient, Pulse, Respiration, Temperature. Observation of the Sick, sign and symptoms to be noted. Reports, food Digestion and the Digestive System. Diet. Milk Serving. Reports, food Digestion and the Digestive System. Diet. Milk Serving. Food Beverages and Cookery. Medicines and their Administration, external Applications. Cold, Not, Counter irritants. Fever Infections and Disinfection specific Infectious Diseases, Surgical Nursing Sepsis and Asepsis, Antiseptic. Operation. After-Care Dressing and Wound. Sick Children. Common Ailments on After-Care, Dressing and wound Sick Children Common Ailments.

Health Education

Health Education Principles, ethics, attributes of health educator, essential steps and introduction to the main methods in health education. History development and growth of health education in India. Various methods of Health Education.

Community Pharmacy and Management

Scope: The course is designed to impart basic knowledge and skills to provide various pharmaceutical care services to patients and general practitioners in the community setup.

Objectives: Upon completion of the course, the student shall be able to understand the procedure to set up and manage the community pharmacy

- to review and fill the prescription
- to counsel the patients about the disease and medications.
- to check Blood Pressure, capillary blood glucose and lung function.

Chapter	Topic
1.	Community Pharmacy Practice -Definition, history and development of community pharmacy-International and Indian scenario
2.	Professional responsibilities of community pharmacist. Introduction to concept of Good Pharmacy Practice.
3.	Prescription and prescription handling <ul style="list-style-type: none">• Definition, Parts of prescriptions, legality of prescriptions, Prescription handling, labelling of dispensed medications (Main label, Ancillary label, pictograms), brief instructions on medication usage.• Dispensing process, dispensing errors and strategies to minimize them
4.	Patient counselling <ul style="list-style-type: none">• Definition and Benefits of patients counselling,• Stage - counselling Introduction, counselling content, counselling process and counselling conclusion,• Barriers - Types and strategies to overcome the barriers• Counselling points for the selected chronic diseases (Hypertension, Diabetes, Asthma, Tuberculosis, Chronic obstructive pulmonary disease and AIDS)• PPIs -(Patient Package Insert) - Definition, Importance and benefits of PPIs. Scenario of PPI use in India and other countries.

- Patient Information leaflets - Definition and uses.

6. **Communication skills**

- Definition, types of communication skills
- Interactions with professionals and patients
- Verbal communication skills (one-to-one, over the telephone)
- Written communication skills.
- Body language,
- Patient interview techniques.

7. **Medication Adherence**

Definition, factors influencing non adherence, strategies to overcome non-adherence

8. **Health Screening services**

- Introduction and usefulness of health screening services
- Blood Pressure measurement
- Recording to capillary blood glucose
- Lung function assessment using peak flow meter
- Calculation of Body mass index.

9. **Over the Counter (OTC) medications**

- Definition, need and role of Pharmacist in OTC medication dispensing.
- OTC medications in India, counseling for OTC products.
- Self medication and role of pharmacist in promoting safe self-medication.

10. **Responding to symptoms/minor ailments**

Etiopathogenesis, clinical presentations, non-pharmacological and pharmacological drug therapy of following minor ailments

- Head ache,
- GI disturbances (Nausea, Vomiting, Dyspepsia, diarrhea, constipation),
- Worm infestations,
- Pyrexia,
- Ophthalmic disorders (Glaucoma and Conjunctivitis)
- Upper Respiratory Tract infections,

- Skin infections,
- Oral and dental disorders.

11. **Community Pharmacy Management**

- Legal requirements to set up a community pharmacy
- Site selection requirements,
- Pharmacy designs and interiors
- Vendor selection and ordering
- Procurement, inventory control methods, and inventory management
- Financial planning and management
- Accountancy in community pharmacy - Day book, Cash book
- Introduction to pharmacy operation softwares - usefulness and availability.
- a) Standard Operating Procedures (SOP) of Pharmacy management

PRACTICALS

Minimum of 25 experiments to be conducted

1. Introduction to community pharmacy practice
2. Review of prescriptions for legality and completeness
3. Review of prescription for drug-drug interactions.
4. Preparation of dispensing labels for medicines
5. Health Screening services - B.P. recording, Capillary Blood Glucose check up, Lung function assessment through peak flow meter.
6. Counselling of patients for chronic diseases and medications
7. Counselling of patients in minor ailments.
8. Visit to other community pharmacies and study of the activities and prepare a report.

2nd YEAR **MEDICAL ASSISTANT / PHARMACIST**

STERILIZATION & DISINFECTION

Physical, Chemical and Mechanical Methods etc. Disposal of Contaminated Media, sterilization of syringes, glass wares, apparatus etc.

SURGICAL INSTRUMENTS, THEIR NAMES & USES, PREPARATION OF PATIENT FOR OPERATION, PRE & POST OPERATIVE PATIENT CARE

SURGICAL INSTRUMENTS (Their Names & Uses)

(Their Preparation & Uses)

SURGICAL INSTRUMENTS:

Instruments for general surgery

Operation of the face and neck

Operations of the Nose, Throat and Ear

Ophthalmic Surgery

Operations on the Chest

Operations on the Genito-Urinary Tract

Gynecological and Obstetric Operations

Orthopaedic Operations

Neuro-Surgical Operations

Operations on the Vascular System

Trauma Surgery

PREPARATION OF INSTRUMENTS TRAY:

Major procedures tray

Basic / Minor procedures tray

Limited procedures tray

Thyroid tray

Long instruments tray

Biliary Tract Procedures tray

Choledochoscopy tray

Basic rigid Sigmoidoscopy tray

Gastrointestinal procedures tray

Rectal procedures tray

Gynecologic and Obstetric trays:

Dilatation of the Cervix and Curettage of the Uterus (D&C) tray

Cervical Cone tray

Laparoscopy tray

Abdominal Hysterectomy tray

Caesarian section tray

Vaginal Hyserectomy tray

GENITOURINARY TRAYS:

Vasectomy tray

Open Prostatectomy tray

Kidney tray

THORACIC TRAYS:

Mediastinoscopy tray

Thoractomy tray

Pacemaker tray

CARDIOVASCULAR TRAYS:

Vascular procedures tray

Vascular shunt tray

Cardiac procedures tray

ORTHOPAEDIC TRAYS:

Basic orthopaedic procedures tray

Minor orthopaedic procedures tray

Hip replacement tray

Knee or Ankle Anthroscopy tray

NEUROLOGIC PROCEDURES TRAY

Craniotomy tray

Laminectomy tray

OTORHINOLARNGOLOGIC (ENT TRAYS):

Basic Ear procedures tray

Nasal procedures tray

Myringotomy tray

Tonsillectomy and Adenoidectomy tray

Tracheostomy tray

Antral Puncture tray

OPHTHALMIC TRAYS:

Basic Eye procedures tray

Eyelid and Conjunctival procedures tray

Basic Eye Muscle procedures tray

Dacryocystorhinostomy tray

Corneal Procedures tray

Cataract extraction and Lens proceures tray

Glaucoma procedure tray

Basic Eye procedures Microscope tray

Retinal procedures tray

PEDIATRIC TRAYS:

Pediatric major procedures trays

Pediatric minor procedures trays

Pediatric Gastrointestinal procedures trays

PREPARATION OF PATIENT FOR OPERATION, PRE & POST OPERATIVE PATIENT CARE**PRE-OPERATIVE CONSIDERATIONS:**

Psychological support of the surgical patient.

PROTECTION OF THE PATIENT IN SURGERY:

Admission Procedure

Transfer Procedure Position

Environmental Controls

Electro Surgery

Operative Records

Counting Procedure

Sterilization

Emergencies and Disasters

SAFETY FOR MEDICAL ASSISTANT, PHARMACIST IN A OPERATION THEATRE:

In Service education

Body mechanic

Fatigue factors

Radiation safety

Infection control

Chemical hazards

Objectives: Upon the completion of the course, the student shall be able to understand.

- Pharmacokinetics and pharmacodynamics of various drugs.
- the clinical uses, dose, adverse effects indications and contraindications for various drugs

Chapter

Topic

1.

General Pharmacology

- Introduction and scope of Pharmacology
- Various routes of drug administration- advantages and disadvantages
- Drug absorption - definition, types, factors affecting drug absorption
- Bio availability -definition, factors affecting drug distribution
- Biotransformation of drugs - Definition, types of biotransformation reactions.
- Excretion of drugs - Definition, routes of drug elimination
- General mechanisms of drug action and factors modifying drug action.

2.

Drugs Acting on Peripheral Nervous System

- Steps involved in neurohumoral transmission
- Definition, classification, pharmacological actions, dose, indications, and contraindications of
 - a) Cholinergic drugs
 - b) Anti-Cholinergic drugs
 - c) Adrenergic drugs
 - d) Adrenergic receptor blockers.
 - e) Neuromuscular blocking agents
 - f) Drugs used in Myasthenia gravis
 - g) Local anaesthetic agents

h) Non Steriodal Anti-Inflammatory drugs (NSAIDs)

3. **Drugs Acting on Eye**
Definition, classifications, pharmacological actions, dose, indications and contraindications of Miotics, Mydriatics and Cycloplegics.
4. **Drugs Acting on the Central Nervous System**
Definition, classification, pharmacological actions, dose, indications and contraindications of
 - General anaesthetics
 - Hypnotics and sedatives
 - Anti-Convulsant drugs
 - Anti-Anxiety drugs
 - Anti-depressant drugs
 - Centrally acting muscle relaxants
 - Narcotic analgesics
5. **Drugs Acting on Cardiovascular System**
Definition, classification, pharmacological actions, dose, indications and contraindications of
 - Anti-hypertensive drugs
 - Anti-anginal drugs
 - Anti-arrhythmic drugs
 - Drugs used in atherosclerosis and congestive heart failure.
6. **Drugs Acting on Blood and Blood Forming Organs**
Definition, classification, pharmacological actions, dose, indications and contraindications of Haematinics, Ant-coagulants and Anti platelet drugs
7. **Definition classification, pharmacological actions, dose, indications and contraindications of**
 - Bronchodilators
 - Expectorants
 - Anti-tussives
8. **Drugs Acting on Gastro Intestinal Tract**
Definition, classification, pharmacological actions,

dose, indications and contraindication of

- Anti-ulcer drugs
- Anti-emetics
- Laxatives and purgative
- Anti-diarrheal drugs

9. **Drugs Acting on Kidney**

Definition, classification, pharmacological actions, dose, indications and contraindication of

- Diuretics
- Anti-Diuretics

10. **Hormones and Hormone Antagonists**

- Physiological and pathological role and clinical uses of thyroid hormones and anti-thyroid drugs, Parathormone, calcitonin and vitamin D
- Insulin, Oral hypoglycemic agents
- Estrogen and Progesterone
- Oxytocin

11. **Autocoids**

- Physiological role of Histamine, 5 HT and Prostaglandins.
- Classification, clinical uses and adverse effects of antihistamines and 5 HT antagonists

12. **Chemotherapy**

Classification, dose, indication and contraindications of drugs belonging to

- Penicillins
- Cephalosporins
- Aminoglycosides
- Fluoroquinolones
- Anti-tubercular drugs
- Anti-fungal drugs
- Anti-viral drugs
- Anti-cancer

13. **Pharmaco-Vigilance**

- a) Pharmaco-vigilance: Basics, Objectives & methods
- b) Pharmaco-vigilance Programme of India.

- c) ADRs : Understanding & Reporting.
- d) Causality Assessment
- e) Brief introduction to: Haemo-vigilance & Materio-vigilance

PRACTICALS

- Demonstration with recommended software and explanations only
- No use of animals for doing the Experiments

PHARMACOTHERAPEUTICS

Scope: The course is designed to impart basic knowledge of etiopathogenesis, disease management and drug related problems.

Objectives: Upon completion of the course, the student shall be able to understand the clinical manifestations of various diseases

- drug therapy of various diseases
- medication counselling points

Chapter	Topic
I.	Pharmacotherapeutics-Introduction, scope and objectives
II.	Definition, etiopathogenesis, clinical manifestations, non pharmacological and pharmacological management of the diseases associated with.
1.	Cardiovascular System <ul style="list-style-type: none">• Hypertension• Angina and Myocardial infarction• Hyperlipidemia• Congestive Heart Failure
2.	Respiratory System <ul style="list-style-type: none">• Asthma• COPD

3. **Endocrine System**
 - Diabetes
 - Thyroid disorders - Hypo and Hyperthroidism
4. **CNS**
 - Epilepsy
 - Parkinson's disease,
 - Stroke
 - Migraine
5. **GI Disorders**
 - Gastro esophageal reflux disease
 - Acid Pepsin Disease,
 - Alcoholic liver disease
 - Inflammatory Bowel Diseases (Crohns disease and Ulcerative colitis).
6. **Hematological disorders**
 - Iron deficiency anemia,
 - Megaloblastic anemia
7. **Infectious diseases**
 - Tuberculosis
 - Pneumonia
 - Urinary tract infections
 - Gonorrhoea and Syphilis
 - Malaria
 - HIV & Opportunistic infections
8. **Musculoskeletal disorders**
 - Rheumatoid arthritis,
 - Osteoarthritis
9. **Dermatology:**
 - Psoriasis,
 - Scabies,
 - Eczema
 - Impetigo
10. **Ophthalmology**
 - Conjunctivitis (bacterial and Viral)
 - Glaucoma
11. **Women's Health**
 - Contraception - Chemical Methods, IUDs
 - Disorders related to Menstrual Cycle - Polycystic ovary Syndrome, Dysmenorhea, Premenstrual Syndrome.