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GENERAL PHARMACUTICS Part-1

Paper A General Pharmcology

Paper B Physiology & Pharmacutical chemistry

| UNIT-1 | | Pharmacy orientation | | | | |
|--------|-------|---|--|--|--|--|
| | 1.1 | Definitions | | | | |
| | 1.2 | Scope of pharmacy | | | | |
| | | 1.2.1 Hospital pharmacy | | | | |
| | | 1.2.2 Clinical Pharmacy | | | | |
| | | 1.2.3 Forensic pharmacy and jurisprudence | | | | |
| | | 1.2.4 Retail and wholesale pharmacy | | | | |
| | | 1.2.5 Industrial Pharmacy | | | | |
| | 1.3 | Role of pharmacist in Modern Pharmacy | | | | |
| UNIT | -2 | History of pharmacy | | | | |
| | 2.1 | Ancient period | | | | |
| | 2.2 | Medieval period | | | | |
| | 2.3 | Greeks and Arabs | | | | |
| | 2.4 | Modern Ages | | | | |
| | 2.5 | Role of Muslim Scientists in the development of pharmacy profession | | | | |
| UNIT-3 | | General physico-chemical principles in pharmacy | | | | |
| | 3.1 | Solution | | | | |
| | 3.1.1 | Definitions | | | | |
| | 3.1.2 | Types | | | | |
| | 3.1.3 | Concentration Expressions | | | | |
| | 3.2 | properties of Solutions | | | | |
| | | 3.2.1 Colligative properties | | | | |
| | | 3.2.2 Constitutive properties | | | | |

3.2.3 Additive properties

3.3 Solubility and solubilization

3.3.1 Definitions

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- 3.3.2 Factors Affecting Solubility
- 3.3.3 Solubility curves
- 3.3.4 Solubility products
- 3.3.5 Salting in and salting out
- 3.4 Distribution of Solute in solvent
- 3.5 Application of distribution law
- 3.6 Ionization
 - 3.6.1 Definitions
 - 3.6.2 Ionization of water
 - 3.6.3 Sorenson's Ph scale
 - 3.6.4 Ion product of water
 - 3.6.5 Ionization Constant
 - 3.6.6 pka,pkb and pkw
 - 3.6.7 PH meter
- 3.7 Buffers
 - 3.7.1 pH Indicator
 - 3.7.2 In-vivo buffers
 - 3.7.3 in-vitro buffers
 - 3.7.4 Drugs as buffers
- 3.8 Surface tension and its application in pharmacy
- 3.9 Viscosity and its Application in pharmacy
- 3.10 Colloids
- 3.10.1 Types

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PHARMACUTICAL PREPARATIONS PART-1

| UNIT-1 | Oral solution | , Syru | ps and Elixirs |
|--------|---------------|--------|----------------|
| | | | |

- 1.1 Oral Solutions
 - 1.1.2 Solution and their preparation
 - 1.1.3 Drugs mixtures for solution
 - 1.1.3 Oral rehydration Solution
 - 1.1.4 Oral Colonic lavage Solution
- 1.2 Syrups
 - 1.2.1 Components and preparation of Syrups
- 1.3 Elixirs
 - 1.3.1 Preparation of Elixirs
 - 1.3.2 Medicated and non medicated Elixirs

UNIT-2 <u>Suspensions, Emulsions, Magmas and Gels</u>

- 2.1 Suspensions
 - 2.1.1 Formation of Suspensions
 - 2.1.2 Physical properties and Dispersed particles
 - 2.1.3 Formulation of Suspension
 - 2.1.4 Official Suspensions
- 2.2 Emulsions
 - 2.2.1 Types of Emulsions
 - 2.2.2 Theories of emulsification
 - 2.2.3 Formation of emulsion
 - 2.2.4 Preservation of emulsion
 - 2.2.5 Emulsifying agents

SYLLABUS PHARMACY TECHNOLOGY 2nd Semester 2.2.7 HLB System 2.2.8 Special emulsion system 2.3 Magma 2.4 Gel **Trans-dermal Drug Delivery system** UNIT-3 **Colloidons** 3.1 3.2 Creams 3.3 Liniments 3.4 Lotions 3.5 ointments 3.6 **Pasts** 3.7 Plaster **Topical Gels** 3.8 3.9 **Topical Powders** 3.10 **Topical Solutions** 3.11 **Topical tinctures** 3.12 Modern trans-dermal System in use UNIT-4 **Natural products Introduction to Pharmacognosy** 4.1 4.2 **Natural Source of drugs** 4.2.1 Animal origin

4.2.2 Plants origin

4.2.3 Mineral origin

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- important constituents of Medical Plants 4.3
 - 4.3.1 Alkaloids
 - 4.3.2 Glycosides
 - 4.3.3 Saponins
 - 4.3.4 Tannins
 - 4.3.5 Volatile Oils

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Biopharmaceutics and Clinicle pharmacology Part-1

| UNIT-1 | <u>Introduction</u> | | | |
|--------|--|--|--|--|
| 1.1 | Biopharmaceutics | | | |
| 1.2 | Clinical pharmacology | | | |
| 1.3 | Relation between Clinical pharmacology and Clinical Pharmacy | | | |
| UNIT-2 | <u>Pharmacokinetics</u> | | | |
| 2.1 | Definitions | | | |
| | 2.1.1 First Order Kinetics | | | |
| | 2.1.2 Zero Order Kinetics | | | |
| 2.2 | Routes of administration of drugs | | | |
| 2.3 | The absorption of drugs | | | |
| 2.4 | Factor modifying drug absorption | | | |
| 2.5 | Factors involved in transfer of drug across membrane | | | |
| 2.6 | Absorption from other sites | | | |
| 2.7 | Distribution and Bioavailability of drugs | | | |
| 2.8 | Bio-Transformation of drugs | | | |
| 2.9 | Elimination of drugs from body | | | |
| | 2.9.1 Renal, Biliary and Fecal Excretion | | | |
| | 2.9.2 Other routes of excretion | | | |
| UNIT-3 | <u>Pharmacodynamics</u> | | | |
| 3.1 | Mechanism of drug action | | | |

- 3.1.1 Sites of action
- 3.1.2 Drug receptors
- 3.2 Factors modifying drug effects and drug dosage

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| | | 5 () | | | | | |
|--------|------------|---|--|--|--|--|--|
| UNIT-4 | | Adverse Drug Reactions | | | | | |
| 4 | l.1 | Introduction | | | | | |
| 4 | 1.2 | Over-dosage | | | | | |
| 4 | 1.3 | Drug interactions | | | | | |
| 4 | 1.4 | Secondary affects | | | | | |
| 4 | 1.5 | Idiosyncras | | | | | |
| 4 | 1.6 | Hypersensitivity | | | | | |
| 4 | 1.7 | Tachyphylaxis | | | | | |
| 4 | 1.8 | Drug induced diseases | | | | | |
| 4 | 1.9 | Therapeutic index | | | | | |
| | | 4.9.1 LD50 | | | | | |
| | | 4.9.2 ED50 | | | | | |
| 4 | 1.10 | Drug Tolerance, Dependence, Habituation and Addiction | | | | | |
| UNIT-5 | | Drug interaction | | | | | |
| 5 | 5.1 | introduction | | | | | |
| 5 | 5.2 | Types of Drug interaction | | | | | |
| 5 | 5.3 | Factors affecting Drug interaction | | | | | |
| 5 | 5.4 | Role of pharmacist in Drug interaction | | | | | |
| UNIT-6 | | <u>Compliance</u> | | | | | |
| e | 5.1 | Compliance and non Compliance | | | | | |

Strategies for improving Compliance

6.2

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| UNIT-7 | | Drug Poisoning | | | | | |
|--------|-------|---|--|--|--|--|--|
| | 7.1 | Introduction | | | | | |
| | 7.2 | Basic Principles of treatment | | | | | |
| UNIT | -8 | Essential drugs and rational use of drugs | | | | | |
| | 8.1 | Concept of essential Drugs | | | | | |
| | 8.2 | List of essential drugs in Pakistan | | | | | |
| | 8.3 | Concept and principles of rational drug use | | | | | |
| UNI-9 | | Drugs acting on autonomic Nervous System | | | | | |
| | 9.1 | Introduction to Autonomic Pharmacology | | | | | |
| | 9.2 | Cholinergic Drugs | | | | | |
| | 9.2.1 | Classification | | | | | |
| | 9.2.2 | Drugs to be studied | | | | | |
| | | - Acetylecholine | | | | | |
| | | - Pilocarpine | | | | | |
| | | - Neostigmin | | | | | |
| | | - Pyridostigmin | | | | | |
| | 9.3 | Anticholinergic Drugs | | | | | |
| | | 9.3.1 Classification | | | | | |
| | | 9.3.2 Drugs to be studied | | | | | |

Atropine

Belladonna Alkaloids

- Hyoscine
- Tropicamide
- Homatropine

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- Procyclidine
- Benzhexole
- 9.4 Adrenergic Drugs
 - 9.4.1 Classification
 - 9.4.2 Drugs to be studied
 - Dobutamin
 - Dopamin
- 9.5 Anti Adrenergic Drugs
 - 9.5.1 Classification
 - 9.5.2 Drugs to be studied
 - Ergot alkaloids
 - Propranolol
 - Atenolol
 - Labetalol
 - Clonidine
 - Methyledopa

UNIT-10

VASODIALATORS

- 10.1 Classification
- 10.2 Drugs to be studied
- Glyceryl trinitrate
- Isosorbid Nitrate

Isosorbid mononitrate
Nifedifine
Diltiazime-- Verapamil

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UNIT-11 <u>Drug Used in Congestive Heart Failure</u>

- 11.1 Basic information about Congestive Heart failure
- 11.2 Classification
- 11.3 Drugs to be studied
 - Digoxin

UNIT-12 <u>Drugs used in cardiac arrhythmias</u>

- 12.1 Classification
- 12.2 Drugs to be studied
 - Quinidine
 - Disopyramide

UNIT-13 <u>Diuretics</u>

- 13.1 Classification
- 13.2 Drugs to be studied
 - Acetazolamide
 - Furosemide
 - Spironolactone
 - Triameteren
 - Amiloride
 - Mannitol

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| UNIT-14 | Angeotensin Converting | g Enz | yme | (ACE | <u> Inhibitor</u> |
|---------|------------------------|-------|-----|------|-------------------|
| | | | | | |

- 14.1 Classification
- 14.2 Drugs to be studied
 - Captopril
 - Enalapril

UNIT-15 Antihypertensive Drugs

Classification used in hypertension

UNIT-16 <u>Drugs used in the treatment of Asthma</u>

- 16.1 Basic information about bronchial Asthma
- 16.2 Classification
- 16.3 Drugs to be studied
 - Salbutomol
 - Terbutaline
 - Theophyline
 - Aminophyline
 - Sodium chromoglycate
 - Ketotifen

SYLLABUS PHARMACY TECHNOLOGY 3rd Semester

GENERAL

PHARMACUTICS Part- 2

Paper A Pharmacy & Pharmacagnocy

Paper B Pharmaceutics & Biochemistry

| UNIT-1 | | Pharmaceutical process | | | | |
|------------------------------------|-----------------------|---|--|--|--|--|
| | 1.3 | Preciptation | | | | |
| | 1.4 | Crystallization | | | | |
| | 1.5 | Distillation | | | | |
| | 1.6 | Sublimation and lyophilization | | | | |
| | 1.7 | Decantation | | | | |
| | 1.8 Deliquescence | | | | | |
| | 1.9 | Desiccation | | | | |
| | 1.10 | Efflorescence | | | | |
| | 1.11 | Elutriation | | | | |
| | 1.12 | Exsiccation | | | | |
| 1.13 Hygroscopicity | | | | | | |
| 1.14 Levigation | | | | | | |
| UNIT-2 | | <u>Pharmaceutical calculations</u> | | | | |
| | 2.1 | Latin abbreviations | | | | |
| | 2.2 | Meteorology | | | | |
| | | 2.2.1 Metric System | | | | |
| | | 2.2.2 Common System | | | | |
| | | 2.2.3 Conversions | | | | |
| | Calculations of doses | | | | | |
| 2.4 Reducing and enlarging formula | | | | | | |
| | 2.5 | Density, Specific gravity and specific volume | | | | |
| 2.6 Weight and volumes of liquids | | | | | | |
| | 2.7 | percentage Preparations | | | | |
| | 2.8 | Dilution and Concentration | | | | |

Alligation methods

2.9

3rd Semester PHARMACEUTICAL DISPENSING

| UNIT-1 | <u>Prescriptions</u> | | | | |
|-----------------------------------|---|--|--|--|--|
| 1.1 Definition | | | | | |
| 1.2 Various parts of prescription | | | | | |
| 1.3 | Dispensing routine | | | | |
| 1.4 | General dispensing Procedure | | | | |
| 1.5 | Recciving, preparing, reching delivering and recording of Prescriptions | | | | |
| 1.6 | Dispensing of Prescription | | | | |
| 1.7 | Most common Prescriptions | | | | |
| | 1.7.1 Benzyl benzoate lotion | | | | |
| | 1.7.2 Calamine Mixture | | | | |
| | 1.7.3 Carminative Mixture | | | | |
| | 1.7.4 Cold Cream | | | | |
| | 1.7.5 Cough Mixture | | | | |
| | 1.7.6 Kaolin Mixture | | | | |
| 1.7.7 Liquid Paraffin emulsion | | | | | |
| 1.7.8 Sulphur Lotion | | | | | |
| 1.7.9 Zinc Oxide cream | | | | | |
| 1.8 Prescription Incompatibility | | | | | |
| | 1.8.1 Definition | | | | |
| | 1.8.2 Types of Incompatibility | | | | |
| | 1.8.3 Therapeutic Incompatibility | | | | |
| UNIT-2 | Introduction to Classical Dosage Forms | | | | |
| 2.1 | Definition | | | | |
| 2.2 | .2 Classification | | | | |
| 2.3 | Advantages and Disadvantages of various preparations | | | | |
| 2.4 | lozenges | | | | |
| 2.5 Magmas | | | | | |
| 2.6 | Pessaries | | | | |
| 2.7 Throat paint | | | | | |

SYLLABUS PHARMACY TECHNOLOGY 3rd Semester

| UNIT-3 | <u>Dressing and First Aid supplies</u> |
|--------|---|
| 3.1 | Dressing and bandages |
| 3.2 | Medicines cabinet |
| 3.3 | Hot water bottle, Steam packs, Electric heating Pad |
| 3.4 | Cold applications and Cold packs |

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PHARMACEUTICAL PREPARATION PART-2

| UNIT-1 | Opthalmic, Nasal and Otic preparations | | | | |
|--|--|--|--|--|--|
| 1.1 | Ophthalmic Preparations | | | | |
| | 1.1.1 Ophthalmic solutions | | | | |
| | 1.1.2 Suspensions | | | | |
| | 1.1.3 Ointment Insertts | | | | |
| 1.2 | Nasal Preparations | | | | |
| | 1.2.1 Nasal Decongestant solutions | | | | |
| | 1.2.2 Decongestant inhalers | | | | |
| 1.3 | Ear preparations | | | | |
| | 1.3.1 Anti infective preparations | | | | |
| | 1.3.2 Anti-inflammatory and Analgesic Preparations | | | | |
| UNIT-2 <u>Introduction to parenteral preparation</u> | | | | | |
| 2.1 | Official type of injections | | | | |
| 2.2 | Solvents and vehicles for injection | | | | |
| 2.3 | Added Substances | | | | |
| UNIT-3 | Suppositories and Pessaries | | | | |
| 3.1 | Suppository bases | | | | |
| 3.2 | Methods of Preparations | | | | |
| 3.3 | Packaging and storages | | | | |
| UNIT-4 | Pharmaceuticals Aerosoles | | | | |
| 4.1 | Atrosol | | | | |
| | 4.1.1 Principals of working | | | | |

| | 4.1.3 The Acrozol containers | | | |
|-------------------------------|------------------------------|--|--|--|
| | 4.1.4 Filling operations | | | |
| | 4.1.5 | .1.5 Testing, Packaging, labelling and storage of Acrosols | | |
| 4.1.6 Pharmaceutical aerosols | | | | |
| | | | | |
| | | | | |
| | | - Examples of Medicated Inhalations | | |
| | | - Examples of Medicated Sprays | | |
| UNIT-5 | | <u>Powders</u> | | |
| 5.1 | powde | ers | | |
| | 5.1.1 | Preparation of Powders | | |
| | 5.1.2 | Mixing of Powders | | |
| | 5.1.3 | Uses and Packaging of Powders | | |
| 5.2 | granul | es and effervescing granulated salts | | |
| 5.3 | Capsules | | | |
| | 5.3.1 | Hard and soft Gallatin Capsules | | |
| | 5.3.2 | Capsule formulations and selection of capsule size | | |
| | 5.3.3 | Preparation of filled Hard and soft gelatin capsules | | |
| | 5.3.4 | Inspecting, Counting, Packaging and Storing capsules | | |
| 5.4 | 4 Tablets | | | |
| | 5.4.1 | Types of tablets | | |
| | 5.4.2 | Tablets Characteristics | | |
| | 5.4.3 | Tablet Components | | |
| | 5.4.4 | Methods of preparation of tables | | |
| UNIT-6 | <u>Prep</u> | aration of specific pharmaceutical Agents | | |
| 6.1 Penicillines | | llines | | |

4.1.2 System of formulation

- 6.2 Antisera
- 6.3 Vaccines
- 6.4 Oral Rehydration salts

3rd Semester

UNIT-7 Sterilization of pharmaceutical preparations

- 7.1 Thermal Sterilization
- 7.2 Chemical Sterilization
- 7.3 Radiational Sterilization

CLINICAL PHARMACOLOGY PART-2

UNIT-1

Drugs acting on CNS

- 1.1 Sedatives and Hypnotics
 - 1.1.1 Classification
 - 1.1.2 Drugs to be studied
 - Diazepam
 - Lorazepam
 - Alprazolam
 - Chloral hydrate
 - Paraldehyde
- 1.2 Antiepileptics
 - 1.2.1 Basic Information about epilepsy
 - 1.2.2 Classification
 - 1.2.3 Drugs to be studied
 - Phenobarbitone
 - Phenytoin sodium
 - Sodium valporate
 - Carbamazepine
 - Clonazepam
- 1.3 Antidepressant Drugs
 - 1.3.1 Basic information about depression
 - 1.3.2 Classification
 - 1.3.3 Drugs to be studied

- Amitriptyline
- Maprotiline
- Trazodone
- Fluoxitine
- 1.4 Antipsychotics
 - 1.4.1 Basic information about psychosis
 - 1.4.2 Classification
 - 1.4.3 Drugs to be studied
 - Chlorpromazine

- Halloperidol
- Thioridazine
- Fluphenazine
- 1.5 Antiparkinsonian Drugs
 - 1.5.1 Basic information about parkinsonism
 - 1.5.2 Classification
 - 1.5.3 Drugs to be studied
 - Levodopa
 - Carbidopa
 - Bromocriptin
- 1.6 Local Anesthetics
 - 1.6.1 Classification
 - 1.6.2 Drugs to be studied
 - Lignocain
 - Ethyl Chloride
- 1.7 General Anesthetics
 - 1.7.1 Classification
 - 1.7.2 Drug to studied
 - Thiopentone sodium
 - Ketamin
 - Ether
 - Chloroform
 - Hallothan
 - Nitrous Oxide
- 1.8 Skeletal Muscle Relaxant
 - 1.8.1 Classification
 - 1.8.2 Drugs to be Studied
 - Gallamine
 - Succinyl choline
 - Orphenadrine

Antimicrobial Agents

- 2.1 Antibacterial Agents
 - 2.1.1 Penicillines
 - 2.1.1.1 Classification
 - 2.1.1.2 penicilline in General
 - 2.1.1.3 Drug to be studied

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- Benzyl Penicillin
- Ampicillin
- Amoxycilli
- Benzathine penicillin
- 2.1.2 Cephalosporins
 - 2.1.2.1 Cephalosporins in General
 - 2.1.2.2 Classification
 - 2.1.2.3 Drug to be studied
 - Cephradine
 - Cefaclor
 - Cefotaxim
 - Ceftriaxone
- 2.1.3 Tetracyclines
 - 2.1.3.1 Classification
 - 2.1.3.2 Tetracyclines in general
 - 2.1.3.3 Drugs to be Studied
 - Oxyteracycline
 - Minocycline
 - Doxycycline

2.1.4 Aminoglycosides

- 2.1.4.1 Clissification
- 2.1.4.2 Aminoglycosides in general
- 2.1.4.3 Drugs to be studied
 - Neomycin
 - Gentamycin
 - Tobramycin

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- 2.1.5 Macrolides
 - 2.1.5.1 Claissification
 - 2.1.5.2 Marolides in general
 - 2.1.5.3 Drugs to be studied
 - Erythromycin
 - Klarithromycin
 - Azithromycin
 - Lincomycin
 - Clindamycin
- 2.1.6 Chlorampinicol
- 2.1.7 Quinilones
 - 2.1.7.1 Classification
 - 2.1.7.2 Quinilones in General
 - 2.1.7.3 Drugs to be studied
 - Nalidixic Acid
 - Ofloxacin
 - Ciprofloxacin

- 2.1.8 Sulphonamides
 - 2.1.8.1 Classification
 - 2.1.8.2 Sulphonamides in General
 - 2.1.8.3 Drugs to be studied
 - Cotimoxazole
- Sulphacetamide
- Tobramycin

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- 2.1.9 Urinary Antiseptics
 - 2.1.9.1 Classification
 - 2.1.9.2 Drug to be studied
 - Nitrofurantine
 - pipemide Acid
 - Norfloxacin
- 2.1.10 Antimicrobial Drug
 - 2.1.10.1 classification
 - 2.1.10.2Drug to be studied
 - Rifampicin
 - Streptomycin
 - isoniazide
 - Ethambutal
 - pyrazinamide
 - Thiaccetazone
 - Para Amino Salicylic Acid (PAS)

Dapsone

2.2 Anti Fungal Agents

- 2.2.1 Classification
- 2.2.2 Drug to be studied
 - Nystatin
 - Clotrimazole
 - Griseofulvin
 - Ketoconazole
 - Amphotericin B
 - Tobramycin

- 2.3 Anti amebic Agents
 - 2.3.1 Classification
 - 2.3.2 Drugs to be studied
 - Metronidazole
 - Diluxanide Furoate
- 2.4 Anti Malarial Agents
 - 2.4.1 Classification
 - 2.4.2 Drug to be studied
 - chloroquine
 - Amodiaquine
 - Quinine
 - Primaquine
 - Mefloquine
 - Halofantrine
 - pyrimethamine

- Combination Antimalarials
- 2.5 Anti Leshmaniasis Agents
 - 2.5.1 Classification
 - 2.5.2 Drugs to be studied
 - Pentavalent antimony compounds
- 2.6 Anti viral Agents
 - 2.6.1 Classification
 - 2.6.2 Drugs to be studied
 - Acyclovir
 - Ribavarin

Clinical pharmacology part 3

Paper A Industrial Pharmacy & Dispensery

Paper B Pharmaceutical preparation

| UNIT-1 | Analgesics |
|--------|------------|
| | |

- 1.1 Opioid Analgesics
- 1.2 Calssification
- 1.3 Drugs to be studied
 - Morphine
 - Pethidine
 - Pentazocin
 - Buprenorphine
- 1.2 Non Opioid Analgesics
 - 1.2.1 Classification
 - 1.2.2 Drugs to be studied
 - Acetaminophen
 - Metamizole
- 1.3 Non Steroidal Anti inflammatory Drugs (NSAIDs)
 - 1.3.1 Classification
 - 1.3.2 NSAIDs in general
 - 1.3.3 Drugs to be studied
 - Acetyle salicylic Acid
 - Diclofenac sodium
 - Ibuprofen
 - indometacin
 - Mefenamic Acid
 - Phenylebutazone
 - Piroxicam

- 1.4 Antipyretics
 - 1.4.1 Classification

| UNIY-2 | Drugs used in treatement of Gout |
|--------|--|
| 2.1 | Classification |
| 2.2 | Drugs to be studied |
| | - Allopurinol |
| UNIT-3 | Drugs used in Anemia |
| 3.1 | Classification |
| 3.2 | Drugs to be studied |
| | - Ferrous Sulphate |
| | - Iron dextran |
| UNIT-4 | Drug used in Disorders of Coagulation |
| 4.1 | Classification |
| 4.2 | Drugs to be studied |
| | - Vitamin K |
| | - Heparin |
| UNIT-5 | <u>Anthelmenthics</u> |
| 5.1 | Classification |
| 5.2 | Drugs to be studied |

Albendazole

| Mebendazole |
|-------------|
| Levamisole |

- Piperazine
- Pyrantel pamoate

UNIT-6 <u>Drugs used in Gastrointestinal Disease</u>

- 6.1 Antacids
 - 6.1.1 Classification
 - 6.1.2 Antacids in general
 - 6.1.3 Drugs to be studied
 - Sodium Bicarbonate
 - Aluminum Hydroxide
 - Magnesium hydroxide
- 6.2 Gastric Anti secretory Drugs
 - 6.2.1 Classification
 - 6.2.2 Drugs to be studied
 - Cimitidine
 - Ranitidine
 - Famotidine
 - Omeprazole
- 6.3 Mucosal protective Agents
 - 6.3.1 Classification
 - 6.3.2 Drugs to be studied
 - Sucralfate
- 6.4 Gastrointestinal Motility Regulators
 - 6.4.1 Classification

- 6.4.2 Drugs to be studied
 - Metoclopramide
- 6.5 Antiemetic drugs
 - 6.5.1 Classification
 - 6.5.2 Drugs to be studied
 - Promethazine
 - Diphenlydrate
 - 5.6 Laxatives

- 5.6.1 Classification
- 5.6.2 Drugs to be studied
 - Ispaghula Husk
 - Milk of Magnesia
 - Senna
 - Bisacodyle
 - Lactulose
 - Glycerin Suppository
- 5.7 Anti diarrhoeal drugs
 - 5.7.1 Classification
 - 5.7.2 Drugs to be studied
 - Kaoline
 - Pectine
 - Diphenoxylate
 - Loperamide

UNIT-7

Endocrine Drugs

7.1 Steriods

- 7.1.1 Classification7.1.2 Steroide in general
- 7.1.3 Drugs to be studied
 - Prednisolone
 - Dexamethasone
 - Hydrocortisone
 - Beclomethasone
 - Betamethasone

- 7.2 Sex Hormones
 - 7.2.1 Classification
 - **7.2.2** Sex hormone in general
 - 7.2.3 Drugs to be studied
 - Estradiol
 - Progesterone
 - Testoterone
- **7.3** Pituitary Hormones
 - 7.3.1 Classification
 - 7.3.2 Drugs to be studied
 - Oxytocin

UNIT-8

Antidiabetic Agents

- 8.1 Classification
- 8.2 Drugs to be studied
 - Insuline
 - Glibenclamide
 - Gliclazide

- Metformin
- Acrabose

UNIT-9

Anti Allergics

- 9.1 Classification
- 9.2 Drugs to be studied
 - Chlorpheneramine
 - Clemastine
 - Cetrizine
 - Cyproheptadine

SYLLABUS PHARMACY TECHNOLOGY 4th Semester

UNIT-10

Cough Suppressents

- 10.1 Classification
- 10.2 Drugs to be studied
 - Phalcodeine
 - Dextromethorphan

UNIT-11

Drugs used in Thyroid disorders

- 11.1 Classification
- 11.2 Drugs to be Studied
 - Thyroxine
 - Neomerkazole
 - Logol,s Iodine

UNIT-12

Vaccines and Antisera

- 12.1 Classification
- 12.2 Drugs to be Studied
 - EPI Vaccines
 - Hepatitis B Vaccine

- Meningicocal Vaccine
- Anti Rabies Vaccines
- Immunoglobulines
 - Anti Rabies Antiserum
 - Anti Tetanus Antiserum
 - Anti Diphtheria Antiserum
 - Snake Antivenum

UNIT-13 <u>Vitamins</u>

- 13.1 Classification
- 13.2 Drugs to be studied
 - Vitamin A
 - Vitamin D
 - Vitamin E
 - Vitamin K
 - Vitamin B complex (B1 B6 B12 Nicotinamide)
 - Folic Acid
 - Vitamin C

HOSPITAL PHARMACY

| UNIT | Γ-1 | Hospital and it,s orginazation |
|--------|-----|---|
| | 1.1 | Difinition |
| | 1.2 | Classification |
| | 1.3 | Organization and Administration |
| | 1.4 | Various departments of a hospital |
| UNIT | Γ-2 | Hospital Pharmacy |
| | 2.1 | Definition |
| | 2.2 | Managing Hospital Pharmacy |
| | | 2.2.1 Role of Hospital Pharmacist |
| | | 2.2.2 Pharmacy and Therapeutic Committee |
| UNIT-3 | | Purchase and Inventory Controle |
| | 3.1 | Purchasing Agent versus Pharmacist |
| | 3.2 | Role of Pharmacist in Drug Procurment |
| | 3.3 | Purchase Procedure |
| | 3.4 | Store room arrangements and Storage of Radio Pharmaceuticals |
| UNIT | Γ-4 | Inpatient and out-patient dispensing |
| | 4.1 | General procedure for inpatient and out-patient dispensing including patient record keeping |
| | 4.2 | Procedure for inpatient and out-patient dispensing of Narcotics in a Hospital |

QUALITYCONTROLE PHAMACEUTICAL MARKETING AND MANAGEMENT FORENSIC PHARMACY

| UNIT-1 | Quality Controle |
|--------|--|
| 1.1 | Definition and Importance of Quality control |
| 1.2 | Quality assurance |
| 1.3 | General Principals of Quality control |
| 1.4 | Methods used in Quality control |
| 1.5 | Working procedure of Drug Testing Laboratories in Pakistan |
| 1.6 | ISO Standards |
| UNIT-2 | Pharmaceutical markrting and Management |
| 2.1 | Marketing Environment |
| 2.2 | The Right product |
| 2.3 | Marketing Management |
| 2.4 | Product Management |
| 2.5 | Trade and generic meaning |
| 2.6 | Current Good Manufacturing Practice |
| 2.7 | Retail pharmacy |
| | 2.7.1 Wholesale Pharmacy |
| | 2.7.2 Community pharmacy |
| | 2.7.3 Requirements for a Pharmacy Shop |
| | 2.7.4 Managing a Pharmacy Shop |
| | - OTC Products |
| | - Prescription Products |
| | - Sale of Narcotics |

UNIT-3

Forensic Phaarmacy

- 3.1 Definitions of terms used in Drug Act
 - Drug
 - Spurious drug
 - Counterfeit drug
 - Dangerous drug
 - Misbranded drug
 - Adulterated drug
 - Batch and Batch number
 - Official drug
 - Sale of drugs
- 3.2 Rules and regulations governing Purchase, Storage and sale of drugs
- 3.3 Duties and Powers of drug Inspector under pharmacy Drug Act
- 3.4 Procedure for inspection of drug Store
- 3.5 Procedure for sampling of drugs for the purpose of analysis
- 3.6 Penalties under Drug Act regarding storage and sailing of Drugs