B.PHARM VIth SEMISTER

COURSE NO 601: FORENSIC PHARMACY

Evolution of pharmacy and drug legislation in India. A study of the following acts with up-to-date amendments.

a) Pharmacy Act
b) Drugs and Cosmetic Act and Rules
c) Narcotic Drugs and Psychotropic Substances Act (1986)
d) Drugs and Magic Remedies Act
e) Drugs (Price Control) Order
f) Medicinal and Toilet Preparations (Excise duties) Act and Rules.
g) Patents Act and Intellectual Property Rights
h) Medical Termination of Pregnancy Act
i) Code of Pharmaceutical Ethics

Suggested Books

1. Original Laws Published by Government of India.
2. Forensic Pharmacy by B.M. Mithal
3. Laws of drugs in India – Hussain

COURSE NO 602: PHARMACOLOGY-I THEORY

2. Drugs acting on Central Nervous System: Central depressants - ethyl alcohol, general anesthetics, basal narcotics, hypnotics, analgesic hypnotics, anxiolytics, antipyretic analgesics.
   CNS stimulants and analeptics.
   Psychopharmacological agents: Neuroleptics, antidepressants, anxiolytics, hallucinogens.
   Habit forming drugs and drugs of addiction.
4. Drugs acting on Cardiovascular system: Coagulants, anticoagulants, Drugs acting on blood forming organs, antihypertensive agents, vasodilators, antianginal agents, antiarrhythmics, cardiotonics, plasma substitutes, antihyperlipidemic agents.
5. Drugs acting on the kidney: Diuretics, antidiuretics, drugs useful in urinary tract infections.

**Text Books:**
3. Lippincort’s illustrated pharmacology.
4. Pharmacology and pharmacotherapeutics by Satoshkar and Bandarkar.

**Reference Books:**
Pharmacological basis of Therapeutics by Goodman and Gillman.
Text book of clinical pharmacology –Bertram.C.Katzung

**COURSE NO 603: PHARMACOLOGY-I  PRACTICAL**

List of Practicals:
1. Excretion of drugs in urine, sweat, saliva in humans.
2. Involvement of acetylcholine in ciliary movement of frog’s oesophagus.
3. Drug action on the eye of rabbit- miotics and mydriatics.
4. Drug antagonism with pilocarpine and atropine in rabbits.
5. Straub test and analgesia with morphine in the mice.
7. Drug action on intact frog heart.
8. Action of acetylcholine and nicotine on the rectus abdominis muscle of frog.
9. Dose response curve (DRC) with acetylcholine on rectus abdominis muscle of frog.
10. Potentiation of acetylcholine response but not of nicotine by eserine on rectus abdominis muscle of frog.
11. Inhibition of acetylcholine response by curare/procaine/quinidine/pethidine on rectus abdominis muscle of frog.
12. Different stages of general anaesthesia using ether in mice.
13. Effect of ions on isolated perfused frog heart.
14. Effect of digoxin on normal & hypodynamic heart.

**COURSE NO 604: INDUSTRIAL PHARMACY & COSMETIC TECHNOLOGY**


II. Formulation Development : Factors involved,

IV. A study of the formulation, process and equipment used in the large scale manufacture, evaluation, and quality control of the following dosage forms.
   (i) Suspensions (ii) Emulsions (iii) Liquid orals (Syrups and Elixirs).
   i. Tablets (ii) Tablet Coating – sugar, film and enteric coating
   ii. Capsules – hard and soft.

V. (i) Parenterals (ii) Other sterile products – eye ointments, eye drops.

VI. (i) Sustained release products (ii) Microencapsulation and microcapsules (iii) Aerosol preparations

VII. Formulation and preparation of the following Cosmetics – Hand lotions and creams, face powders, baby and bath powders, dentifrices, shampoo, lipstick, shaving preparations and hair dyes and creams, skin creams.

COURSE NO 605: INDUSTRIAL PHARMACY & COSMETIC TECHNOLOGY PRACTICAL

Formulation, preparation and quality control of pharmaceutical products (25) covering dosage forms listed in theory. The number of products under each category is as follows:


Text Books:

1. The theory and practice of Industrial Pharmacy by Leon Lachman, H.A. Lieberman and Joseph L. Kanig.
COURSE NO 606: PHARMACEUTICAL ANALYSIS –II
(THEORY)

Physicochemical aspects of analytical chemistry with special reference to pharmaceutical analysis.

Chromatographic methods-1: Principles, theories, instrumentation and applications
Involved in a) Column chromatography b) Paper chromatography c) Thin layer chromatography and HPTLC d) Ion-exchange and gel filtration techniques

Chromatographic methods-II: Principles, theories, instrumentation and applications
Involved in a) Gas chromatography (GC) b) High performance liquid chromatography (HPLC)

Spectrophotometric analysis: A discussion of basic principles including interaction of matter with electro-magnetic radiation, absorption, emission, luminescence and scattering phenomena, units of measurement and definition of terms: a) absorptiometry: quantitative consideration of absorption phenomena including Beer and Lambert,s laws and their mathematical expression, deviations from the laws and methods used in absorption spectrophotometry (visible, UV and IR) including sources, monochromators, detectors, preparation of calibration curves and pharmaceutical applications. Sources of errors and their correction and validation of spectrophotometric methods. B) Basic principles, equipment and methods used and pharmaceutical applications of flame photometry, photofluorimetry, turbidimetry and nephelometry.

Electrochemical Analysis: A discussion of basic principles involved in electrochemical analysis, electrochemical cells and half-cells, electrodes, electrode reactions and electrode potentials:a) Potentiometry: basic principles involved in measurement of EMF and pH , Nernest equation, typical equipment and their construction, factors influencing EMF of cell, portable, stationary and on-line equipment for pH measurement, applications b) Potentiometric titrations including principles involved, methods for detection pf end point including dead stop mend point, applications in neutralization, redox and precipitation titrations, equipment used, exploration of titration curves obtained with acids and bases of different strength and mixture of acids. c) Conductometric titrations: basic principles, titrations, equipment and applications. d) Polarography: basic principles, titrations, equipment and applications in qualitative and quantitative analysis.e) amperometric titrations: basic principles, titrations, equipment and applications

Basic principles, definition of terms, equipment and their working and applications of – NMR and Mass spectrometry. Thermal methods of analysis and radioimmunoassay assay.

Reference books

1. Pharmaceutical chemistry by L.G. Chatten (Marcel Dekker)
2. A text book of pharmaceutical analysis by K.A. Connors (John Willey)
3. Pharmaceutical analysis- modern methods by J.W. Munson (Marcel Dekker)
4. Instrumental methods of analysis by Willard, Merritt, Dean and Settle (CBS publishers)
6. Introduction to Instrumental analysis by Robert D.Braun Published by Pharma book syndicate.

**COURSE NO 607: PHARMACEUTICAL ANALYSIS –II (PRACTICAL)**


Reference books
1. A text book of pharmaceutical analysis by K.A. Connors (John Willey)