# Preparatory Pharmacy

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## A) FIRST TERM

1- PHYSICAL CHEMISTRY, INORGANIC CHEMISTRY AND ORGANIC CHEMISTRY

### 1-1 PHYSICAL CHEMISTRY

Lectures 4 hrs/week for one semester:
States of matter, thermochemistry, chemical equilibria, thermodynamics, chemical kinetics and electrochemistry.

### 1-2 INORGANIC CHEMISTRY

Lectures 2 hrs/week and practical 3 hrs/week for one semester:
Structure of the atom, chemical bonding and radioactivity.
Practical course:
- Identification of acid and basic radicals of simple inorganic salts
- Simple volumetric analysis, titration of acids and bases, oxidation-reductions and precipitation reactions.

### 1-3 ORGANIC CHEMISTRY

Lectures 2 hrs/week and practical 3 hrs/week for one semester:
A systematic study of the following classes of organic compounds:
- Aliphatic hydrocarbons (alkanes, alkenes and alkynes, petroleum
haloalkanes and hydroxy aliphatic compounds.
- Ethers (thioalcohols and thioethers).
- Aldehydes and ketones.
- Acids, acid derivatives.
- Aliphatic nitrogen compounds, Isomerism.
Practical:
- Methods of separation and identification of organic compounds.
- Study of the physical and chemical properties of the following classes of organic compounds, alcohols, aldehydes, ketones, carboxylic acids and some of their derivatives, aniline and phenols.

2-ZOOLOGY
Lectures 4 hrs/week and practical 4 hrs/week for one semester:
1- Invertebrates including Animal Taxonomy:
   - Definition, history, major division of life and the classification of animal kingdom.
   - General characteristics, life activities, classification and examples of major phyla.
2- Cytology and Histology:
   - Cytology: (functional anatomy of the cell, membranous organelles of the cytoplasm, nonmembranous organelles of the cytoplasm, the cytoplasmic inclusions, the nucleus).
   - Histology (tissues of the body, epithelial tissues, muscular tissues, connective tissues, nervous tissues).
3- Embryology and physiology:
   - Embryology: introduction, gametogenesis and spermatogenesis, structure of the sperm and eggs, fertilization, embryonic development of amphioxus, toad, chick and rabbit, embryonic membranes and different types of placenta.
   - Physiology: components that make up blood, mechanism by which the blood carry oxygen, factors determine the oxygen content of the blood, blood type, blood clotting, antibodies and immunity, endocrine hormones, general functions that hormones regulate, classification of the hormones according to their chemical nature, hormone pattern and the general principles of the control of hormone secretion, general mechanism of action of each class of hormones, general principles of endocrine disorders.

3-COMPUTER SCIENCE
Lectures 2 hrs/week and practical 2 hrs/week for one semester:

- Introduction to computers.
- Development of computers.
- DOS system, DOS commands, DOS functions.
- Files and directories, word processing, Basic, command system, Input and output
  operations, variables and data processing.

B) SECOND TERM

1-PHYSICS

Lectures 6 hrs/week and practical 4 hrs/week for one semester:

Properties of the matter:

Units and dimensions, gravitation, elasticity, fluids at rest and surface tension, fluids in motion and viscosity, osmosis and low pressure.

Heat properties of matter:

Heat transfer, radiation, conduction and solar energy specific heat, solids, liquids, liquids and gases, change in phase, kinetic theory of heat.

Electricity:

Introduction, electric charge and atomic, conductors and dielectric, electrolysis, electricity and living cell.

Optics:

Introduction, refraction and reflection.

2-BOTANY

Lectures 6 hrs/week and practical 6 hrs/week for one semester:

- Plant morphology and anatomy:

  Seeds and seedlings, morphology of root, stems and leaves, plant cells and tissues, primary structure of plant organs, secondary thickening in stems and roots.

- Plant kingdom:

  Viruses, bacteria, algae, fungi, bryophytes, pteridophytes, gymnosperms, an introduction to angiosperms with special reference to the floral structure of some families.

- Plant physiology:

  Ultrastructure and function of plant cell organelles, plant water relationship, mineral nutrition, enzymes as catalysis of metabolism, anabolism and catabolism with a special reference to a variety of biosynthetic pathway, growth and differentiation.

3-ENGLISH LANGUAGE AND TERMINOLOGY

Lectures 4 hrs/week for one semester:
- Paragraph writing and punctuation.
- Translation (seen and unseen).
- Conversational and idiomatic English.
- Scientific passages for reading.
- Linguistic exercises.