

Lectures of Medical biology

A- Molecular Cell biology

- 1-** Introduction to cell biology, Types of cell, cell theories.
- 2-** Living status of the cell, living properties of the protoplasm, and General structure of a cell.
- 3-** Chemistry of the cell (inorganic & organic molecules).
- 4-** The organic materials of the cell
Proteins, Lipid, Carbohydrates, and Nucleic acids.
- 5-** Molecular organization of plasma membrane & functions.
- 6-** Modification of the plasma membrane.
- 7-** Molecules crossing the plasma membrane.
- 8-** Structure and functions of cytoplasmic organelles (ribosome, endoplasmic reticulum, Golgi complex, mitochondria, lysosome, peroxisomes, centrioles, cilia and flagella).
- 9-** Cytoplasm (cytoskeleton, cytosol and cytoplasmic inclusions).
- 10-** Structure and functions of the nucleus (nucleolus, nuclear membrane, chromatin and nucleoplasm).
- 11-** Cell cycle and cell division.
- 12-** Gametogenesis
- 13-** Cellular energy.
- 14-** Cellular activity

15- Cellular differentiation.

16- Cellular specialization.

17- Cellular aging.

B- Molecular genetics

1- Genetic terminology.

2- Mendel's 1st law and 2nd law.

3- Mode of Mendelian inheritance.

4- Deviation from Mendelian laws.

5- Linkage and sex-linked inheritance

6- Molecular basis of crossing over

7- Human chromosomes

8- Numerical aberrations

9- Structural aberrations

10- DNA structure and replication

11- RNA structure and translocation

12- Protein synthesis and gene regulation

13- Mutation and its molecular basis

14- Genetic control of metabolism and Gene expression

15- Genetic engineering and biotechnology

16- Recombinant DNA technology

17- Gene cloning

18- Medical application of genetic engineering

C- Basic histology

1- Introduction

2- Epithelial tissue

3- Classification of epithelial tissue

4- Glandular epithelium

5- Cell junctions

6- Connective tissue

7- Classification of connective tissue

8- Blood tissue

9- Cartilage

10- Bone tissue

11- Development and growth of bone

12- Muscle tissue

13- Regeneration of muscle tissue

14- Nervous tissue

15- Synapses