HUMAN ANATOMY AND PHYSIOLOGY-I, BP-101(T)

UNIT-I (Introduction to human body)

CLASS:1

TOPIC – Definition and scope of Anatomy and Physiology

- Anatomy and Physiology are the scientific study of the body structure and their functions.
- A single organism is composed of billions and trillions of cells, tissues, and organs.
- These structures include both microscopic and macroscopic.
- Cells are microscopic structures which are examined only under the electronic microscopic, whereas organs and organ systems are macroscopic structures which can be easily seen through our naked eye.
- Both Anatomy and Physiology are derived from the Ancient Greek language, anatomy meaning study of the structure of organisms and physiology meaning the study of regular mechanisms, and their interactions that function within a living system.

Anatomy

Anatomy is a branch of natural science and biology which includes: Human anatomy, animal anatomy, and plant anatomy. Among these three, human anatomy was the first studied and applied for examining the internal structures, injuries and the other wounds of an individual.

There are several branches of human anatomy.

- **Macroscopic or Gross anatomy**

This anatomy mainly deals with the study of large body parts those which can be seen easily through our naked eyes. For example Anatomy of the kidney, anatomy of the heart, anatomy of lungs, etc. Gross anatomy is further classified into regional anatomy, systemic anatomy, and surface anatomy.

1. Regional anatomy: A study of different structures in a particular region.
2. Systemic anatomy: A study of human structures, the system by system.
3. Surface anatomy: A study of only internal structures of a human body.

- **Microscopic anatomy**

This anatomy mainly deals with the study of very small and minute structures those which can only be examined through the microscope. For example Different types of cells. Microscopic anatomy is further classified into cytology and histology. Cytology deals

with the study of human blood cells and Histology deal with the study of different tissues in the human body.

- **Developmental Anatomy**

This anatomy is mainly used to study the different structural changes in the body which occurs throughout the lifespan. Embryology developmental anatomy is used to know completely about the development process before childbirth.

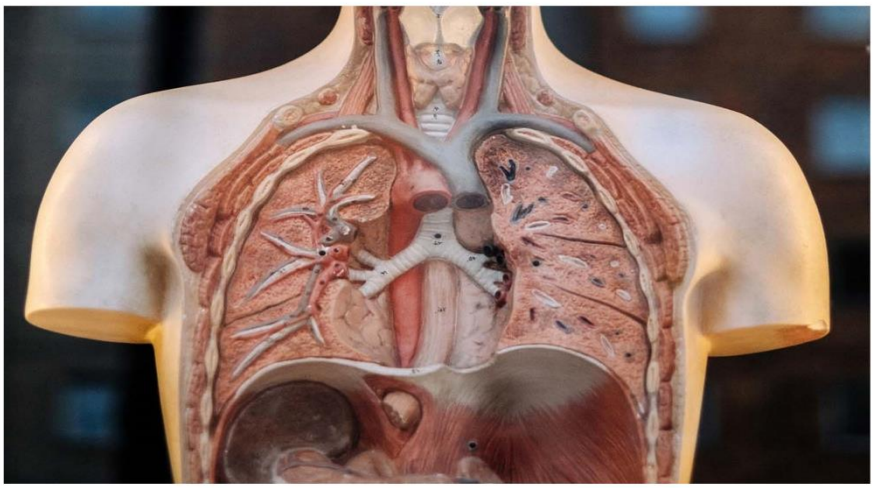
Physiology

Physiology is a branch of natural science and biology which includes the study of the complete functioning system of a body. It is further classified into:

1. System physiology: It is a study of the complete functioning of body systems.
2. Comparative physiology: It is the study of various characteristics of living organisms
3. Medical physiology: It is the study of physiological dysfunctions and other diseases related to the functioning of the human body systems.

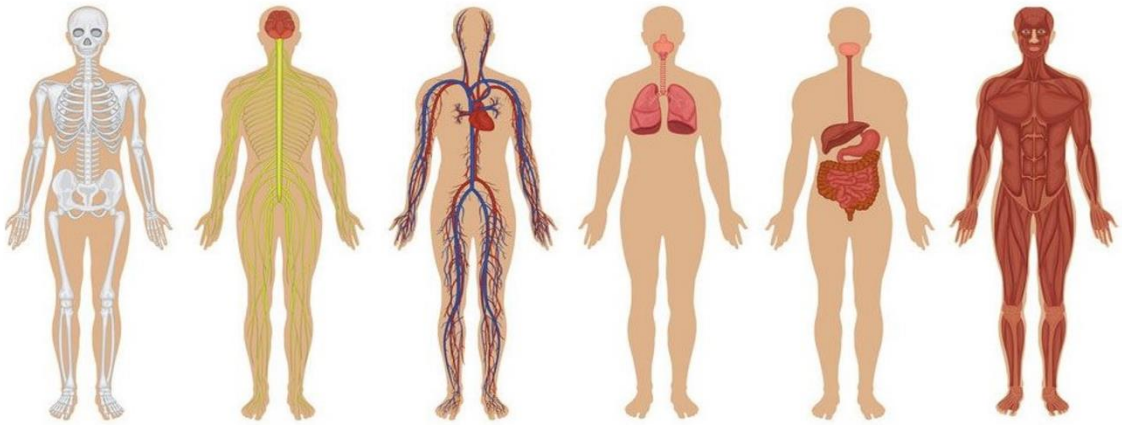
Scope of human anatomy and physiology

This subject is designed to impart fundamental knowledge on the structure and functions of the various systems of the human body. Which helps in understand various mechanisms related to disease and drugs. It also provides the basic knowledge required to understand the various disciplines of pharmacy.

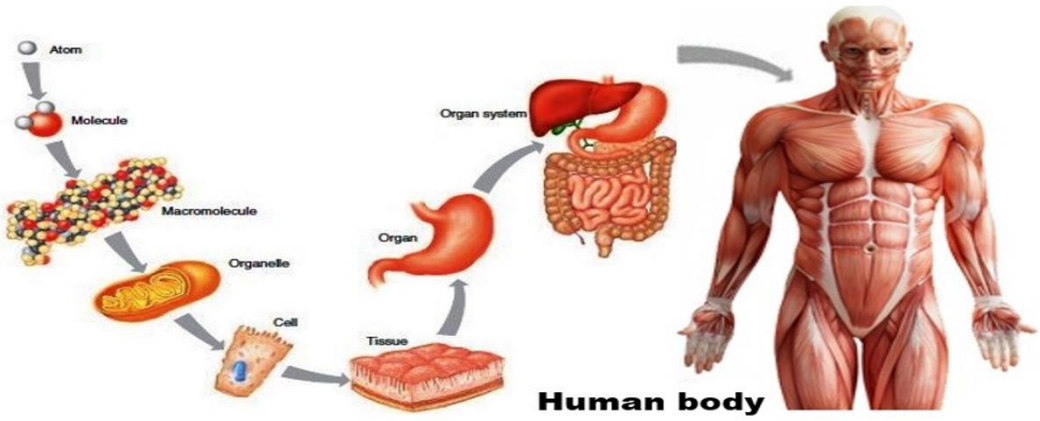


Anatomy is the study of the structure and relationship between body parts.

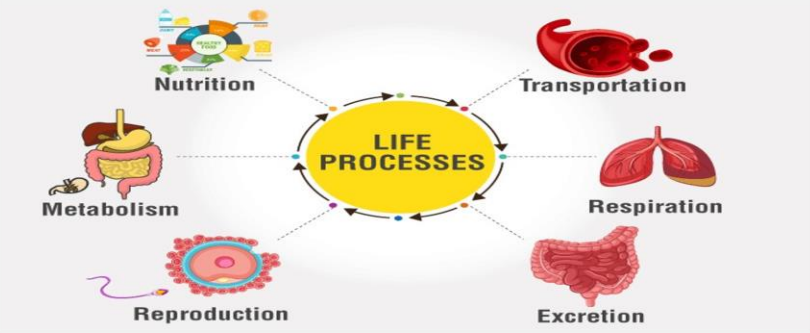
Physiology is the study of the function of body parts and the body as a whole.



Levels of Structural Organization in the human body



BASIC LIFE PROCESSES



IMPORTANT QUESTIONS:

2M QUESTIONS:

1. Define Anatomy and Physiology along with its scope.
2. Define Homeostasis.
3. What is feedback system.
4. Define cell. Write the functions of mitochondria.
5. Differentiate mitosis and meiosis.
6. Differentiate Phagocytosis and Pinocytosis.
7. Define: 1. Facilitated transport 2. Osmosis transport.
8. Differentiate exocrine and endocrine signaling.
9. Define Autocrine and Juxtacrine signaling.
10. Define tissue and its types with examples.

5M+10M QUESTIONS

1) Draw a labelled diagram cell showing its cell organelles and their function.
2) Define tissue and its types in detail.
3) What is cell cycle and explain in detail.
4) What is cell division and explain its types.
5) What are different cell junctions.
6) Explain cell signaling and cell communication.
7) What is homeostasis and explain its feedback mechanism