Introduction of Anatomy and Physiology

Human Anatomy and Physiology are the branches of biology that concerns with forms (structures) and functions of human body.

ANATOMY- Study of structure of whole body and individual parts (organs) and their correlation with each other. Branch of biomedical science dealing with normal structure, shape, size and location of various parts of the body The study of the structure of the body and the physical relationships involved between the body systems. Anatomy derived from Greek words: ana means ‘up’ and tomy means ‘cutting’ , and hence anatomy deals with study of structural components of body i.e. organs by mea

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PHYSIOLOGY- Science deals with the functions of the living organism and its parts (i.e. functions of body parts and their synchronized working to co-ordinate the actions of whole body). Study of how the systems of the body work, and the ways in which their integrated cooperation maintains life and health of the individual Branch of biomedical sciences, dealing with norm

ANATOMICAL POSITIONS-The state which discuss about the body, how it moves, its posture or the relationship of one area to other, assume that the body as a whole is in the specific position called anatomical position. The reference position in which the body is in an erect or standing, posture with the arms at the sides and palms turned forward along with head and feet.

DIRECTIONAL TERMS-Terms used to describe the position of the body parts relative to each other.

• **Ipsilateral and contralateral** are the directional term used most frequently to designate injury to an extremity, on the same side and opposite side respectively. • Superior and Inferior Superior means towards the head or above or upper while

inferior means towards the feet or below or lower. (e.g. lungs located superior to diaphragm while stomach located inferiorly).

• **Anterior and posterior Anterior** means front or in front of or ventral while posterior means back or in back of or dorsal. (e.g. nose is located to anterior surface while shoulders are located on posterior surface of the body).

• **Medial and lateral Medial means** towards the midline of body while lateral means towards the side of the body or away from the midline. (e.g. the ulna is medial to radius bone while lungs are lateral to the heart).

• **Proximal and distal Proximal** means towards or nearest to trunk of the body while distal means away or farthest from the trunk. (e.g. humerus is proximal to the radius while phalanges are distal to carpals).

•**Superficial and deep Superficial** means nearer to the surface while deep means farther away from the body surface. (e.g. skin of the arm is superficial to the muscle below it while bone of the upper arm is deep to the muscles that surround and protect it

TERMINOLOGY

Plantar Belonging to the sole of the foot.

Palmer Belonging to the palm of the hand.

Internal The relationship to the inner surface of the body.

External The relationship to the outer surface of the body.

Transverse Separates superior from inferior.

Coronal (frontal) Separates anterior from posterior.

Sagittal (median) Separates left from right.

Articulation surfaces The part of the bone that enters into the formation of joint.

Articulation A joint between two or more bones.

Bony sinus A hollow cavity within a bone. Border A ridge of bone separating two surfaces.

STRUCTURE OF CELL AND FUNCTIONS OF CELL

Cell: The basic living structural and functional unit of body or life, consists of a cell membrane/ plasma membrane inside which the number of organelles suspended in a watery fluid called cytosol.

Functions of Cell

• Reproduction by cell division

• Use of enzymes and other proteins coded by DNA genes and made via messenger RNA intermediates and ribosomes

• Metabolism

• Response to external and internal stimuli such as change in temperature, pH or levels of nutrients

• Cell contents are contained within a cell surface membrane that is made from a phospholipid bilayer with proteins embedded in it.