majority of the immune system.After fertilization the zygote gives rise to rapid mitotic cycles and generating three distinct germ layers from which all the tissues and organs of the human body are form and these are: ectoderm, mesoderm, and endoderm.After fertilization the zygote gives rise to rapid mitotic cycles and generating three distinct germ layers from which all the tissues and organs of the human body are form and these are: ectoderm, mesoderm, and endoderm.There are four types of tissues: – Epithelial tissue Connective tissue Muscle tissue Nervous tissue Epithelial tissue, it consists of sheets of cells that cover exterior surfaces of the body, lines internal cavities, lumens of internal organs, and forms certain glands.Epithelial tissues Epithelial tissues are thin tissues that cover the skin, line the oral cavity, digestive tract, the urogenital tract, the hollow parts of every organ such as the heart, lungs, eyes, ears, as well as the ventricular system of the brain and central canals of the spinal cord.There are four types of tissues: – Epithelial tissue Connective tissue Muscle tissue Nervous tissue Epithelial tissue, it consists of sheets of cells that cover exterior surfaces of the body, lines internal cavities, lumens of internal organs, and forms certain glands.Epithelial tissues Epithelial tissues are thin tissues that cover the skin, line the oral cavity, digestive tract, the urogenital tract, the hollow parts of every organ such as the heart, lungs, eyes, ears, as well as the ventricular system of the brain and central canals of the spinal cord.The ciliated columnar epithelium bears cilia (finger–like projections of the plasma membrane) on the apical surfaces of cells.The ciliated columnar epithelium bears cilia (finger–like projections of the plasma membrane) on the apical surfaces of cells.Motor neurons The motor neurons send impulses from the brain and spinal cord to skeletal, smooth, and cardiac muscles, and thus control all of the muscle movements.Regulation of extracellular ionic environment –Astrocytes remove excess potassium ions from the extracellular space following neuronal activation.Epithelial cells are classified in to the followings: – Squamous Cuboidal Columnar Transitional Squamous epithelial cells are flat and are connected to each other by cell junctions or disc.Nervous tissue is also excitable, allowing the propagation of electrochemical signals in the form of nerve impulses that communicate between different regions of the body.Stratified cuboidal epithelial tissue can be found surrounding the ducts of many glands, including mammary glands in the breast and salivary glands in the mouth.Motor neurons The motor neurons send impulses from the brain and spinal cord to skeletal, smooth, and cardiac muscles, and thus control all of the muscle movements.Regulation of extracellular ionic environment –Astrocytes remove excess potassium ions from the extracellular space following neuronal activation.Epithelial cells are classified in to the followings: – Squamous Cuboidal Columnar Transitional Squamous epithelial cells are flat and are connected to each other by cell junctions or disc.Nervous tissue is also excitable, allowing the propagation of electrochemical signals in the form of nerve impulses that communicate between different regions of the body.Stratified cuboidal epithelial tissue can be found surrounding the ducts of many glands, including mammary glands in the breast and salivary glands in the mouth.There are five main types of WBCs: – the granular cells which include, Neutrophils, Eosinophils, Basophils, non–granular which includes Lymphocytes and Monocytes.The axon terminals contain various neurotransmitters which are released into the synapses to allow signal transmission from one neuron to the next cell.Neurons can generate electrical signals called action potentials which can pass from one neuron to another cell through synaptic junctions.Once activated, the sensory neurons transmit the

electrical impulses to the rest of the Central Nervous System (CNS) for processing.Their apical surfaces are covered with cilia and microvilli, which allow for the circulation and absorption of CSF respectively.Embryonic Origin of Tissues The zygote, or fertilized egg, is a single cell formed by the fusion of an egg and sperm.The epithelial tissue originates in all three layers, whereas nervous tissue derives from the ectoderm and muscle tissue from mesoderm.Cartilage tissue It is a connective tissue that forms the skeleton of embryos before bone formation begins and persists in parts of the human skeleton into adulthood.Fibrocartilage is very strong tissue found predominantly in the intervertebral disks and at the insertions of ligaments and tendons.Simple squamous epithelia Simple cuboidal epithelia Simple columnar epithelia Stratified squamous epithelia Stratified cuboidal epithelia Stratified columnar epithelia Additionally, there are pseudostratified epithelia and transitional epithelia.Examples of Epithelial tissues Simple squamous epithelial tissue is composed of a single layer of squamous cells that are in direct contact with the basement membrane.Simple columnar epithelial tissue is composed of a single layer of columnar epithelial cells and it lines the digestive tract and the female reproductive system.Stratified columnar epithelial tissue is found predominantly in some organs of the reproductive system, and in the conjunctiva of the eye.Transitional epithelial tissue is a stratified epithelial tissue that consist of ovoid cells that can stretch based on the pressure of liquids inside the organ.There are five main types of WBCs: – the granular cells which include, Neutrophils, Eosinophils, Basophils, non–granular which includes Lymphocytes and Monocytes.The axon terminals contain various neurotransmitters which are released into the synapses to allow signal transmission from one neuron to the next cell.Neurons can generate electrical signals called action potentials which can pass from one neuron to another cell through synaptic junctions.Once activated, the sensory neurons transmit the electrical impulses to the rest of the Central Nervous System (CNS) for processing.Their apical surfaces are covered with cilia and microvilli, which allow for the circulation and absorption of CSF respectively.Embryonic Origin of Tissues The zygote, or fertilized egg, is a single cell formed by the fusion of an egg and sperm.The epithelial tissue originates in all three layers, whereas nervous tissue derives from the ectoderm and muscle tissue from mesoderm.Cartilage tissue It is a connective tissue that forms the skeleton of embryos before bone formation begins and persists in parts of the human skeleton into adulthood.Fibrocartilage is very strong tissue found predominantly in the intervertebral disks and at the insertions of ligaments and tendons.Simple squamous epithelia Simple cuboidal epithelia Simple columnar epithelia Stratified squamous epithelia Stratified cuboidal epithelia Stratified columnar epithelia Additionally, there are pseudostratified epithelia and transitional epithelia.Examples of Epithelial tissues Simple squamous epithelial tissue is composed of a single layer of squamous cells that are in direct contact with the basement membrane.Simple columnar epithelial tissue is composed of a single layer of columnar epithelial cells and it lines the digestive tract and the female reproductive system.Stratified columnar epithelial tissue is found predominantly in some organs of the reproductive system, and in the conjunctiva of the eye.Transitional epithelial tissue is a stratified epithelial tissue that consist of ovoid cells that can stretch based on the pressure of liquids inside the organ.They secrete chemicals that attract neutrophils and monocytes to sites of inflammation.Reflex Arc Diagram Glial cells Glial cells are supporting cells that aid in the maintenance and function of the neurons.They are

activated in response to tissue damage and have the capability to recognize foreign antigens and initiate phagocytosis to remove foreign materials.Microvilli serve to increase the surface area of the epithelium for secretion of mucin and enzymes and to increase the surface area for absorption of nutrients.Connective tissue includes the bones, cartilages, blood, CSF, and lymph tissues.It persists in human adults at the ends of bones as an articular cartilage, at the ends of the ribs, and in the nose, larynx, trachea, and bronchi.In the embryo, cartilage gradually calcifies, and chondrocytes are replaced by osteocytes.The epithelial tissue consists of closely bound cells and is supported by a connective tissue called the basement membrane.Functions of epithelial tissues include: – Protection against abrasion, radiation, chemical substance, and invasion by pathogens.With the exception of the mouth and esophagus, the rest of digestive tract which include the stomach, small and large intestine are covered by these kinds of thin epithelial tissue.This tissue lines the collecting ducts of the kidney and thyroid follicles that secrete thyroid hormones.Pseudostratified epithelial tissue is composed of cells that have varying heights and therefore it looks as if it is a stratified tissue.They secrete chemicals that attract neutrophils and monocytes to sites of inflammation.Reflex Arc Diagram Glial cells Glial cells are supporting cells that aid in the maintenance and function of the neurons.They are activated in response to tissue damage and have the capability to recognize foreign antigens and initiate phagocytosis to remove foreign materials.Microvilli serve to increase the surface area of the epithelium for secretion of mucin and enzymes and to increase the surface area for absorption of nutrients.Connective tissue includes the bones, cartilages, blood, CSF, and lymph tissues.It persists in human adults at the ends of bones as an articular cartilage, at the ends of the ribs, and in the nose, larynx, trachea, and bronchi.In the embryo, cartilage gradually calcifies, and chondrocytes are replaced by osteocytes.The epithelial tissue consists of closely bound cells and is supported by a connective tissue called the basement membrane.Functions of epithelial tissues include: – Protection against abrasion, radiation, chemical substance, and invasion by pathogens.With the exception of the mouth and esophagus, the rest of digestive tract which include the stomach, small and large intestine are covered by these kinds of thin epithelial tissue.This tissue lines the collecting ducts of the kidney and thyroid follicles that secrete thyroid hormones.Pseudostratified epithelial tissue is composed of cells that have varying heights and therefore it looks as if it is a stratified tissue.E. Monocytes functions: – Enters the tissue, where they become larger and turn into macrophages.They secrete vasoconstrictors which constrict blood vessels, causing vascular spasms in broken blood vessels.Nervous cells The nervous tissues contain two types of cells, the Neuron cells and Glial cells The neuron is the basic functional unit of the nervous tissue.Distally the axon branches and those branches are called axon terminals which make synaptic connections with other cells.Types of Neurons by Functions There are three major types of neurons: – Sensory neurons The sensory neurons get activated from the external stimulations such as touching a hot surface or hearing music or a chemical reaction.The lower motor neurons transmit impulses from the spinal cord to the muscles.There are different glial cells in the nervous system, such as Astrocytes, Ependymal cells, Oligodendrocytes, microglia, and Schwann cells.Neurotransmitter uptake – Astrocytes contain specific transporters for several neurotransmitters.Epithelial cells The epithelial cells are closely bound to each other and are supported by a connective tissue called the basement membrane.Functions

of Epithelial cells Absorption, secretion and movement of substances.Epithelial cells in the bronchioles of the lungs contain cilia that move mucus and foreign bodies up to be expelled out.Columnar epithelial cell has an oval nucleus usually located towards the basal of the cell.The cells in the fallopian tubes are ciliated and involved in the movement of the ovum towards the uterus.Tissues Tissue is a group of cells that share a common embryonic origin and share the same morphological features.Beneath the periosteum are tunnels and canals through which blood and lymphatic vessels run to carry nourishment for the bone.It is composed of a dense network of collagen fibers embedded in a firm, gelatinous ground substance.The cartilage plate thus remains of a constant thickness while the bone grows behind it. Once this plate disappears, no further longitudinal bone growth is possible.Protective tissue tends to be thicker and made of multiple layers such as the skin and the esophagus.Classification according to the number of cell layers: – Simple epithelial tissue, it is composed of a single layer of epithelial cells.Classification according to the shape of cell composing cells: – Squamous epithelial tissue: consists of squamous epithelial cells.Stratified Epithelial tissue It is composed of more than one layer of epithelial cells and only one layer is in direct contact with the basement membrane.These tissues often have a protective role, and the extent of friction or abrasion often determines the number of layers of cells.They are found in the urinary and gall bladder lining epithelial tissues.E. Monocytes functions: – Enters the tissue, where they become larger and turn into macrophages.They secrete vasoconstrictors which constrict blood vessels, causing vascular spasms in broken blood vessels.Nervous cells The nervous tissues contain two types of cells, the Neuron cells and Glial cells The neuron is the basic functional unit of the nervous tissue.Distally the axon branches and those branches are called axon terminals which make synaptic connections with other cells.Types of Neurons by Functions There are three major types of neurons: – Sensory neurons The sensory neurons get activated from the external stimulations such as touching a hot surface or hearing music or a chemical reaction.The lower motor neurons transmit impulses from the spinal cord to the muscles.There are different glial cells in the nervous system, such as Astrocytes, Ependymal cells, Oligodendrocytes, microglia, and Schwann cells.Neurotransmitter uptake – Astrocytes contain specific transporters for several neurotransmitters.Epithelial cells The epithelial cells are closely bound to each other and are supported by a connective tissue called the basement membrane.Functions of Epithelial cells Absorption, secretion and movement of substances.Epithelial cells in the bronchioles of the lungs contain cilia that move mucus and foreign bodies up to be expelled out.Columnar epithelial cell has an oval nucleus usually located towards the basal of the cell.The cells in the fallopian tubes are ciliated and involved in the movement of the ovum towards the uterus.Tissues Tissue is a group of cells that share a common embryonic origin and share the same morphological features.Beneath the periosteum are tunnels and canals through which blood and lymphatic vessels run to carry nourishment for the bone.It is composed of a dense network of collagen fibers embedded in a firm, gelatinous ground substance.The cartilage plate thus remains of a constant thickness while the bone grows behind it. Once this plate disappears, no further longitudinal bone growth is possible.Protective tissue tends to be thicker and made of multiple layers such as the skin and the esophagus.Classification according to the number of cell layers: – Simple epithelial tissue, it is composed of a single layer of epithelial cells.Classification according to the shape of cell composing cells: – Squamous epithelial tissue: consists of squamous

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Platelets play large role in the process of blood clotting.The axons carry stimulus or signals from the cell towards other cells.The dendrites, bring signals or stimuli toward the cell body from other cells.3– Interneurons: – The interneurons are located in the CNC.The first four types of glial cells are found in the central nervous system, and Schwann cells are found in the peripheral nervous system.Promotion of myelination by oligodendrocytes.Oligodendrocytes These cells are responsible for the insulation the axons in the central nervous system.They are equivalent to the Schwann cells in the peripheral nervous system.Microglia These cells form the resident immune system of the brain.The nucleus is flattened and located near the center of the cell.These cells are found in the epithelial tissues of the skin and GIT.The cuboidal epithelial cells are almost of the same tall and width.Their major functions are absorption and secretion.They are found in the female reproductive system and in the digestive tract.There are three major types: skeletal (voluntary) muscle, smooth muscle, and cardiac muscle in the heart.Bone tissues Bone is living tissue that makes up the body's skeleton.The outer membrane covering the bones is called the periosteum.Muscles, ligaments (????), and tendons (???Considering the number of cell layers and cell types together results in 6 epithelial tissues' types.A. Neutrophils kills bacteria through the process of phagocytosis.B. Eosinophils kills parasites and have a role in allergic reactions.D. Lymphocytes function T lymphocytes (T cells) are responsible for cell–mediated immunity.They present antigens to activate other cells of the immune system.Functions Platelets play large role in the process of blood clotting.The axons carry stimulus or signals from the cell towards other cells.The dendrites, bring signals or stimuli toward the cell body from other cells.3– Interneurons: – The interneurons are located in the CNC.The first four types of glial cells are found in the central nervous system, and Schwann cells are found in the peripheral nervous system.Promotion of myelination by oligodendrocytes.Oligodendrocytes These cells are responsible for the insulation the axons in the central nervous system.They are equivalent to the Schwann cells in the peripheral nervous system.Microglia These cells form the resident immune system of the brain.The nucleus is flattened and located near the center of the cell.These cells are found in the epithelial tissues of the skin and GIT.The cuboidal epithelial cells are almost of the same tall and width.Their major functions are absorption and secretion.They are found in the female reproductive system and in the digestive tract.There are three major types: skeletal (voluntary) muscle, smooth muscle, and cardiac muscle in the heart.Bone tissues Bone is living tissue that makes up the body's skeleton.The outer membrane covering the bones is called the periosteum.Muscles, ligaments (????), and tendons (???Considering the number of cell layers and cell types together results in 6 epithelial tissues' types.The cell has three main parts, the cell membrane, the cytoplasm and the nucleus.The nucleus is separated from the cytoplasm by a nuclear membrane.It contains the DNA (genes) that code for proteins necessary for the cell to function.C. Basophils plays a major role in allergic reactions.Dissolve blood clots when they are no longer needed.They play vital role in the reflex actions.They are rich with mitochondria and other organelles.It provides shape and support for the body, as well as protection for some organs.The harder, outer tissue of bones.Cancellous tissue.Subchondral tissue.The smooth tissue at the ends of bones, which is covered by tissue cartilage. ) may attach to the periosteum.In humans it makes up the external ear and the epiglottis.Example of this tissue is the tissue that lines the alveoli of lungs.Every cell in this tissue

makes contact with the basement membrane.The keratinized cells provide protection against water and nutrient loss.majority of the immune system.C. Basophils plays a major role in allergic reactions.Dissolve blood clots when they are no longer needed.They play vital role in the reflex actions.They are rich with mitochondria and other organelles.It provides shape and support for the body, as well as protection for some organs.The harder, outer tissue of bones.Cancellous tissue.Subchondral tissue.The smooth tissue at the ends of bones, which is covered by tissue cartilage. ) may attach to the periosteum.In humans it makes up the external ear and the epiglottis.Example of this tissue is the tissue that lines the alveoli of lungs.Every cell in this tissue makes contact with the basement membrane.The keratinized cells provide protection against water and nutrient loss.The cytoplasm is where most functions of the cell are carried out.The sponge-like tissue inside bones.The sponge-like tissue inside bones.Types of cells: Stem cell Muscle cell Bone cell Cartilage cell Blood cell Sex cell Nervous cell Fat cellDestroying cancer cells.Destroy old, damaged and dead cells in the body.3.Destroying cancer cells.3.