L2----------

The Human body is composed of organs + skeleton.

***The cell has organelles, Cytoskeleton, and inclusions.**

The Cytoplasm

It is surrounded by plasma membrane (Plasmalemma).

***composed of a matrix, or cytosol.**

***The organelles and inclusions are embedded in the cytoplasm.**

***It is not visible with LM., and is seen only by EM.**

***about 8nm thick.**

***It is known also as the unite membrane.**

***composed of lipid (bilayer) arranged as a phospholipid bilayer +protein + carbohydrates.**

*Plasma membrane

The phospholipid molecule has a hydrophilic head oriented toward extracellular or intracellular compartments, and a hydrophobic head oriented toward the inside of the membrane.

*Functions of Plasmalemma

1- protect the structural integrity of the cell.

2- controlling movements of substances in and out of the cell (selective permeability).

3-Regulating cell –cell interactions.

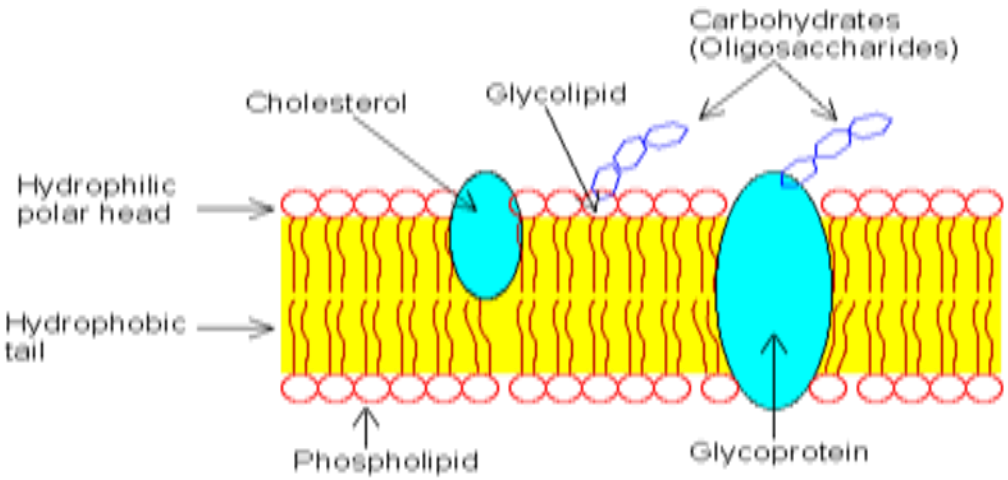
4-recognition of antigens, foreign cells via receptors.

5- Establishing transport systems for specific molecules

6-signal transduction.

7-membrane modifications help to form cellular Junctions microvilli, and cilia.

8-phagocytosis, pinocytosis, and exocytosis.



Exocytosis & Endocytosis

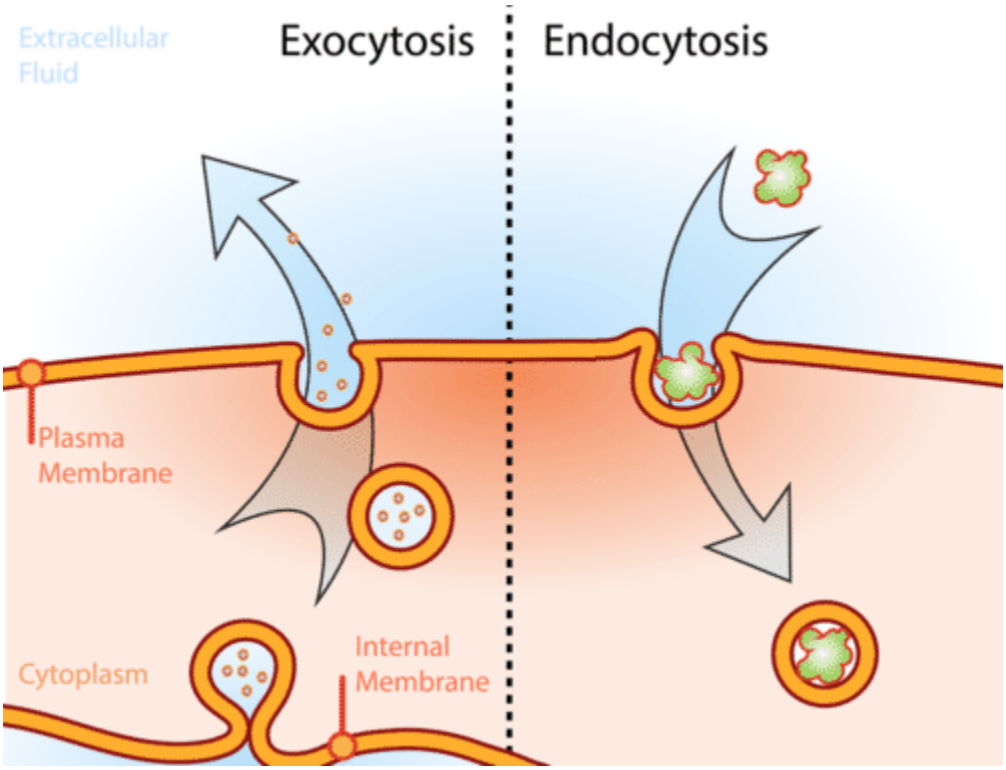
***During exocytosis, vesicles fuse with plasma membrane for secretion.**

***some cells are specialized to produce and release specific molecule.**

Ex, release of digestive enzymes from cells of the pancreas.

***secretion of insulin hormone.**

Exocytosis



Endocytosis

During endocytosis, cells take in substances by invagination a protein of plasma membrane and forming a vesicle around the substances.

Endocytosis occurs as :

***phagocytosis:for solid particles**

***pinocytosis: (cell drinkins)**

***receptor – mediated endocytosis specific particles.**