

Subject - Biology 11th Class

Topic - Structural organisation in Animals

Introduction :-

i) Unicellular Organisms → all activities performed by a single cell.

eg - Digestion, Respiration, excretion, reproduction.

ii) Multicellular Organism → all functions performed by different group of cells arranged in well-organised manner.

Tissue :- Group of similar cells along with inter-cellular substances having similar origin and performing a specific function.



Animal Tissue

* 4 Basic type of tissues

i) Epithelial tissue

ii) Connective tissue

iii) Muscular tissue

iv) Nervous tissue

⇓ Details

i) Epithelial tissue origin → Ectoderm, Endoderm, Mesoderm

Function ÷ protection, secretion, absorption, excretion, reproduction

Types



Simple Epithelium

* composed of single layer of cells.

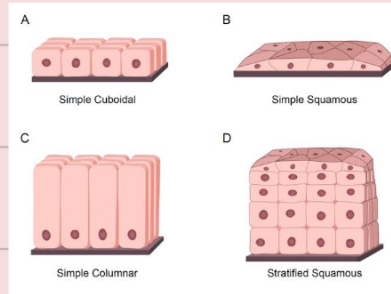
* Function as a lining for body cavities, ducts and tubes.

Compound Epithelium

* consist of two or more cell layers

* protective in function

Types of Simple Epithelium ÷



i) Squamous Epithelium ÷ Made of single thin layer of flattened cells with irregular boundaries.

function ÷ Protection, excretion, gas exchange and secretion of coelomic fluid.

eg ÷ Walls of blood vessels, air sacs of lungs and forms diffusion boundary.

ii) Cuboidal Epithelium ÷ Composed of single-layer of cube-like cells.

function ÷ Secretion and absorption.

eg ÷ in ducts of glands, tubular parts of nephron in kidneys,

Speciality ÷ Microvilli present in cells and increase absorptive surface area. → eg. - epithelium of PCT (proximal convoluted tubule) of nephron.

iii) Columnar Epithelium ÷ tall and slender cell with nuclei at base.

eg - Stomach, Intestine, Gall bladder, bile duct.

Special case ÷ In Intestine → microvilli present in layer and called brush border columnar epithelium.

iv) Ciliated Epithelium ÷ When columnar and cuboidal epithelium bear

cilia on the free surface of the cells.

⇒ Helps in movement of mucus, urine, eggs, cerebrospinal fluid in particular direction.

eg - Bronchioles, fallopian tubes.