Class 9 th bio learn and write on ur note bool

Animal Tissues

Animals move around in search of food, mates and shelter.

Most of the tissues they contain are living.

The structural organisation of organs and organ systems is far more specialised and localised in animals than in plants.

Types of Animal Tissues:

Animal tissues are classified into four types based on the functions they perform:

(i) Epithelial

(ii) Connective

(iii) Muscular

(iv) Nervous

(i) Epithelial tissues

They form the covering of the external surfaces, internal cavities and organs of the animal body.

Epithelial tissue cells are tightly packed and form a continuous sheet.

The skin, the lining of the mouth, the lining of blood vessels, lung alveoli and kidney tubules are

all made of epithelial tissue.

Functions of Epithelial Tissue:

(i) Epithelitum covers most organs and cavities within the body.

(ii) It also forms a barrier to keep different body systems separate.

(iii) The permeability of the cells of various epithelia play an important role in regulating the exchange of materials between the body and the external environment.

Types of epithelial tissues:

Various types of epithelial tissues are:

(a) Simple squamous epithelium: In cells lining blood vessels or lung alveoli, where transportation of substances occurs through a selectively permeable surface, there is a simple flat and extremely thin kind of epithelium which is named as simple squamous epitheliun.

It is found in the lining of the mouth, oesophagus, lung, alveoli, etc.

(b) Stratified Squamous Epithelium: The skin, which protects the body, is also made of squamous epithelium.

Skin epilhelial cells are arranged in many layers to prevent wear and tear. Since they are arranged in a pattern of layers, the epitheliunim is called stratified squamous epithelium.

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(c) Cuboidal epithelium: This is cuboidal in shape and forms the lining of kidney tubules and ducts of salivaiy glands.

In some cases a portion of the epithelial tissue folds inward to form a multicellular gland. This is called glandular epithelium.

It performs a function of secretion and absorption.

(d) Columnar Epithelium: Where absorption and secretion occur, as in the inner lining of the intestine, tall epithelial cells are present and are named as cohunnar epithelium.

In the respiratory tract, on the outer surfaces of epithelial cells there are hair like projevtions called cilia. These cilia can move, and their movement pushes the mucus forward to clear it. This type of epithelium is named as ciliated columnar epithelium.

(ii) Connective tissues

The cells of connective tissue are loosely spaced and embedded in an intercellular matrix.

They are specialised to connect various body organs.

Blood (plasma), bones, Cartilage. ligaments and tendons etc.

Plasma: The fluid (liquid) matrix of blood is called plasma.

Plasma is a yellowish liquid like material.

Plasma contains three types of blood cells suspended in it. These are:

(i) RBC - Red blood cells

(ii) WBC - White blood Cells

(iii) Platelets

Bones: It is also a connective tissue that forms the framework that supports the body.

It is a strong and nonflexible tissue.

Bone cells are embedded in a hard matrix that is composed of calcium and phosphorus compounds.

Ligaments: Two bones are connected to each other by a connective tissue called the ligament.

This tissue is flexible or elastic in nature.

Tendons: Bones are connected to muscles by another type of connective tissue named as Tendons.

Tendons are fibrous tissue with great strength but limited flexibility.

Cartilage: Cartilage is another type of connective tissue which has widely spaced cells. The solid matrix of this tissue is composed of proteins and sugars.

Cartilage smoothens bone surfaces at joints and is also present in the nose, ear, trachea and larynx.

Cartilage of ear can be folded.

Types of connective tissue:

Various types of connective tissues are:

(a) Areolar tissue: They are found in the skin and muscles, around the blood vessels, nerves, etc.

Function of areolar tissue:

It fills the space inside the organs, supports internal organs and helps in repair of tissues.

(b) Adipose tissue: It is found between the internal organs and below the skin.

Function of adipose tissue:

It stores fats.

It act as an insulator.

(iii) Muscular tissues

Muscular tissue consists of elongated cells, also called muscle fibres. This tissue is responsible for movement in our body.

Main function of muscular tissues is to provide movement to the body.

Muscles contain special proteins called contractile proteins, which contract and relax to cause movement.

Types of Muscular Tissues:

Muscular tissues are of three types:

(a) Striated muscles or skeletal muscles or voluntary muscles: These muscles are also called skeletal muscles as they are mostly attached to bones and help in body movement.

Cells are cylindrical, unbranched and multinucleate.

structure of striated muscle

(b) Smooth muscles or involuntary muscles: They are found in the iris of the eye, in ureters and in the bronchi of the lungs.

Cells are long, spindle-shaped and possess a single nucleus.

structure of smooth muscle

(c) Cardiac muscles or involuntary muscles: They help in rhythmic contraction and relaxation of the heart.

Cells are cylindrical, branched and uninucleate

structure of cardiac muscle

(iv) Nervous Tissues

Cells of the nervous tissue are highly specialised for being stimulated and then transmitting the stimulus very rapidly from one place to another within the body.

The brain, spinal cord and nerves are all composed of the nervous tissue.

Neuron: Cells of the nervous tissue are called neurons.

A neuron consists of a cell body, an axon and a dendrite.