

GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ

SESSION-2020-21

CLASS-7 (A, B, C, D, E, F)

SUBJECT- BIOLOGY

WORKSHEET-3

CHAPTER - Tissues

TOPIC: Animal Tissues

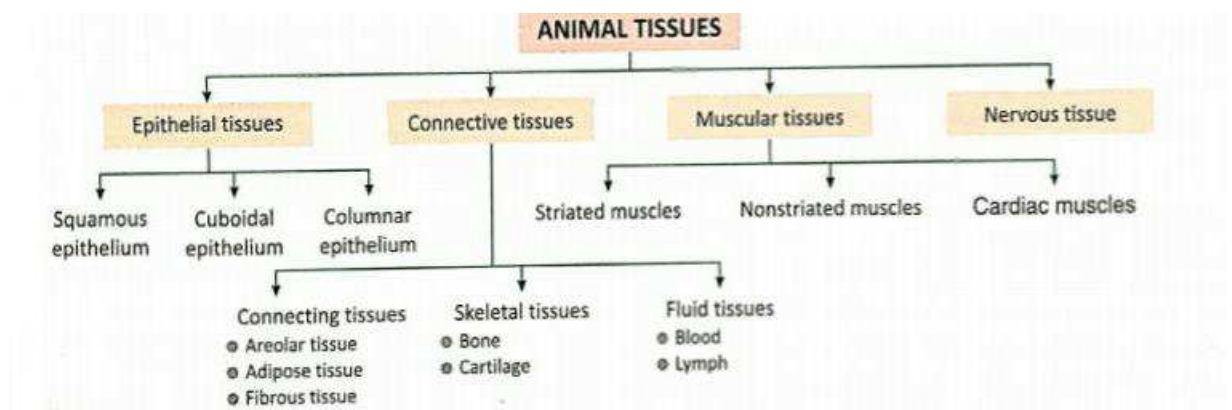
Note: Parents are requested to ensure that the child takes reference from a biology book of class 7 or internet and thereafter answers the questions.

Book: Srijan ICSE Biology Class 7 by Veer Bala Rastogi

Link: <https://youtu.be/7JKq-dfYat4>, <https://youtu.be/8IANWaZLlvq>)

Topic : Animal Tissues

Classification

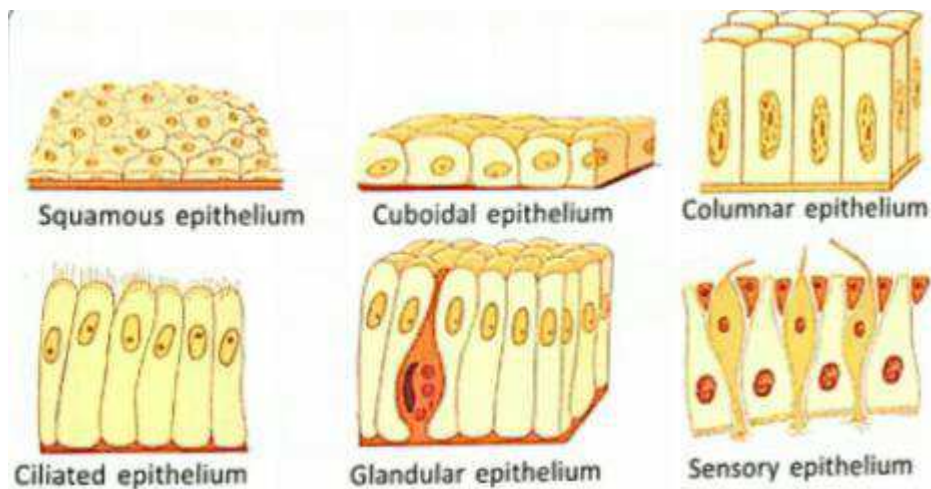


Different types of tissues

- I. **Epithelial Tissues.** - Epithelial tissues form closely packed continuous sheets of cells with no intercellular spaces.

Location - They line cavities of hollow internal organs and also cover the external surface of body and body organs.

Functions- They protect the body organs and prevent the entry of germs in the body. They help in absorption, secretion, excretion, perception and gamete formation.



Different types of epithelial tissues

Tissue	Location	Structure	Functions
1. Squamous epithelium	Outer layer of skin, lining of alveoli, blood vessels, body cavity and buccal cavity	Formed of flattened, scale-like cells; also called pavement epithelium	Protection of underlying tissues.
2. Cuboidal epithelium	<ul style="list-style-type: none"> Lining of kidney tubules, thyroid glands Germinal epithelium in testes and ovaries 	Formed of cube-like cells; arranged in single layer with centrally placed nucleus	<ul style="list-style-type: none"> Absorption and secretion Formation of gametes in ovaries and testes.
3. Columnar epithelium	Lining of pharynx, stomach, intestine, and sweat and sebaceous glands	Formed of cylindrical cells with nucleus near the base; forms a single layer	Absorption and secretion.
Specialised Epithelial Tissues			
4. Ciliated epithelium	Lining of nasal passages, trachea, oviducal funnel and oviduct	Formed of modified columnar cells with cilia	Cilia make substances to move in the cavity.
5. Glandular epithelium	The glands of stomach, intestine, skin and mammary glands	Modified columnar epithelial cells	Secretes digestive juices, oil (sebum), tears and milk in females.
6. Sensory epithelium	Sense organs (taste buds, ears, nose, eyes)	Modified columnar epithelium; free ends of sensory cells have sensory hair	Collects sensory stimuli.

II. Connective tissues-

It is present almost everywhere in the body. Cells of connective tissues are suspended in the matrix or ground substance. Matrix is the intercellular substance.

Functions- Connective tissues hold various tissues and organs together.

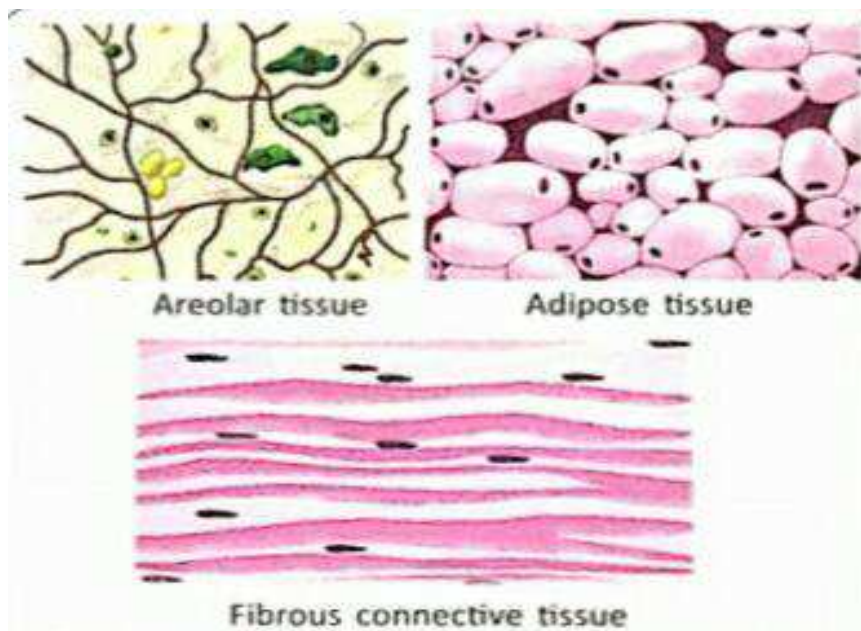
Types of Connective Tissues

1. **Connecting or binding tissues**
2. **Skeletal or supporting tissues**
3. **Fluid or transporting tissues**

1. **Connecting tissues** : They are of the following types;

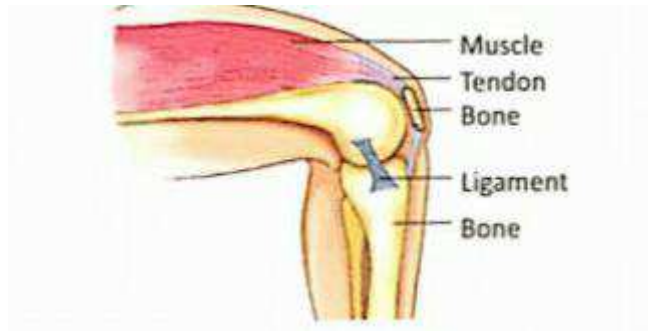
- **Areolar tissue** is the most abundant tissue in the body. It forms thin sheets, binds skin with the underlying tissues and acts as a packing tissue between and within organs in the body cavity.
- **Adipose tissue** store fats in the adipose cells which are filled with oil globules.
- **Fibrous connective tissues** form tendons and ligaments.

Different types of connecting tissues



Difference between tendon and ligament

Tendon	Ligament
1. Strong and nonelastic.	1. Strong but elastic. *
2. Formed of white, nonelastic fibrous tissue.	2. Formed of yellow, elastic tissue.
3. Present at the end of muscle bundles.	3. Present between the end of bones.
4. Joins skeletal muscles to the end of bone.	4. Joins ends of two bones.



Location of tendon and ligament

2. **Skeletal tissues** - These tissues form skeletal framework of the body.

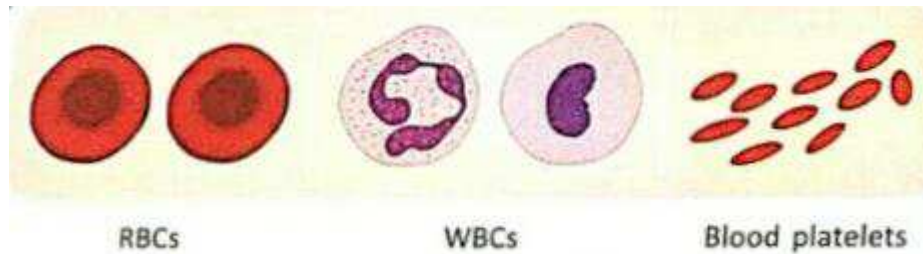
They are of two types: **cartilage and bone**.

- **Cartilage** is firm but elastic connective tissue. It supports the wall of windpipe, nasal septum and external ear (pinna).
Being highly elastic, it is found between the bones at joints. It relieves the bones of shocks and reduces friction between them.
- **Bones** are hard and non-elastic tissues. The inorganic salts of calcium, magnesium and phosphorus in the matrix of bone make it hard, strong and brittle.
Bones form supportive framework, protect delicate internal organs and help in locomotion.

Red blood cells and white blood cells are formed in the red bone marrow of long bones.

3. **Fluid tissues** : These include blood and lymph.

- **Blood** is a red- coloured fluid tissue. Its fluid matrix is called plasma. Plasma is straw- coloured and non living substance. The three types of blood cells that float in plasma are-
Red blood cells (RBCs) supply oxygen to each and every body cell.
White blood cells (WBCs) are called the soldiers of the body. They fight and kill germs that enter the body.
Blood platelets are essential for clotting of blood.
- **Lymph** is filtered blood. It is blood plasma without blood cells and blood proteins. It helps in exchange of substances between blood and tissue cells. It helps in the protection of body against infection and help in healing the wound.



Components of blood

III. **Muscular tissues** are contractile tissues. They form the flesh of the body. They are made up of long, fibrous contractile cells, called muscle fibres. Each muscle fibre is formed of highly contractile myofibrils. These myofibrils are formed of contractile proteins. Because of myofibrils, muscle fibres can contract and relax. Muscle fibres are arranged either in sheets or in bundles.

Functions of muscular tissues - They help in the movement of body parts and in locomotion. They help in the movement of food in alimentary canal. They also help in pumping blood to all parts of body.



Different types of muscular tissues

Tissue	Location	Structure	Functions
1. Striated (voluntary) muscles	Attached to bones	<ul style="list-style-type: none"> Found as bundles Long and cylindrical fibres Have light and dark coloured bands (striations) 	Help in the movement of bones and body parts and help in locomotion.
2. Nonstriated (involuntary) muscles	In the walls of alimentary canal, blood vessels and urinary bladder	<ul style="list-style-type: none"> Found as sheets or sphincter Spindle-shaped long fibres No dark and light bands 	Help in the movement of food, urine, etc.
3. Cardiac (heart) muscles	In the wall of heart	<ul style="list-style-type: none"> Found as a network Cylindrical and branched fibres Have light and dark bands 	Help in pumping blood to different body parts

IV. **Nervous tissue** is specialised for coordinating various life activities of organisms. It is made up of nerve cells called neurons.

Location - It occurs in brain, spinal cord and sense organs.

Functions - The neurons of sense organs detect changes in the environment called stimulus and send this message to the brain and spinal cord in the form of nerve impulse for the appropriate response.

Answer the following questions -

Q1.Fill in the blanks:

- a. _____ tissues cover the external surface of the body.
- b. _____ tissues hold various tissues and organs together.
- c. Cartilage is firm but _____ connective tissue.
- d. _____ is filtered blood.
- e. _____ tissues are contractile tissues.

Q2.Choose the correct option:

- a. The muscles that help in the movement of bones and body parts. _____ (striated muscles/ non striated muscles)
- b. It is called the soldiers of the body. _____(WBC/RBC)
- c. These are formed of white non elastic fibrous tissue. _____(tendons/ ligaments)
- d. _____ is a red- coloured fluid tissue.(plasma / blood)
- e. It is the most abundant tissue in the body. _____(adipose / areolar)

Q3. Answer the following questions in short :

- a. What is the function of columnar epithelium?
- b. Where is sensory epithelium located?
- c. What are the three types of connective tissues?
- d. What is the function of cartilage?
- e. State the functions of fluid tissues.

Q4. Answer the following questions in detail :

- a. Explain the different types of muscular tissues.
- b. Differentiate between tendons and ligaments.
- c. What are the different types of blood cells? State their functions.
- d. Draw the following diagrams:
 - I. Components of blood.
 - II. Different types of muscles.

THE END