CLASS IX : SCIENCE
Chapter 6 : TISSUES

Questions & Answers | Page No. 61 - NCERT Books

Q1. What is a tissue ?

Ans. Tissue is a group of related cells that have a common origin and perform a common function.

Q2. What is the utility of tissues in multi-cellular organisms ?

Ans. (i) Division of Labour. Tissues bring about division of labour in multicellular organisms. It increases efficiency.
(ii) Higher organisation. Tissues become organised to form organs and organ systems.
(iii) Individual Cells. Work load of individual cells has decreased.
(iv) Higher surival. Because of division of labour, higher efficiency and organisation, the multicellular organisms have high survival.

Questions & Answers | Page No. 65 - NCERT Books

Q1. Name types of simple tissues.

Ans. Three – Parenchyma, collenchyma and sclerenchyma. (Meristematic tissue is also a simple tissue).

Q2. Where is apical meristem found ?

Ans. Apical meristem occurs at root and stem tips.

Q3. Which tissue makes up the husk of coconut ?

Ans. Sclerenchyma.

Q4. What are the constituents of phloem ?

Ans. Sieve tubes, companion cells, phloem parenchyma and phloem fibres.

Questions & Answers | Page No. 69 - NCERT Books

Q1. Name the tissue responsible for movement in our body.

Ans. Muscular tissue is responsible for movement in our body.

Q2. What does a neuron look like?

Ans. A neuron consists of a cell body with a nucleus and cytoplasm, from which long thin hair-like parts arise. Usually each neuron has a single long part ,called the axon, and many short, branched parts (processes) called dendrites. An individual nerve cell may be up to a metre long.

Q3. Give three features of cardiac muscles.

Ans. 1. These are involuntary muscles.
2. These are cylindrical, branched and uninucleate.
3. The muscles show rhythmic contraction and reaxation throughout life.

Q4. What are the functions of areolar tissue?

Ans. Areolar tissue fills the space inside the organs, supports internal organs and helps in repair of tissues.

EXERCISES

Q1. Define the term “tissue”.

Ans. Tissue is a group of related cells that have a common origin and perform a common func tion.

Q2. How many types of elements together make up the xylem tissue ? Name them.

Ans. Xylem tissue is formed of four types of elements. They are tracheids, vessels, xylem paren chyma and xylem fibres.

Q3. How are simple tissues different from complex tissues in plants ?

Ans.

Difference between Simple and Complex Tissues	
Simple Tissues	**Complex Tissues**
A simple tissue is formed of only one type of cells.	A complex tissue is made of more than one type of cells.
All the cells perform the same function.	The different cells perform different fractions of function.
There are three types of simple plant tissues- parenchyma, collenchyma and sclerenchyma.	There are two types of complex plant tissues – xylem and phloem.
They form primary structure of the plant.	They form transport system of the plant.

Q4. Differentiate amongst parenchyma, collenchyma and sclerenchyma on the basis of the cell wall.

Ans.

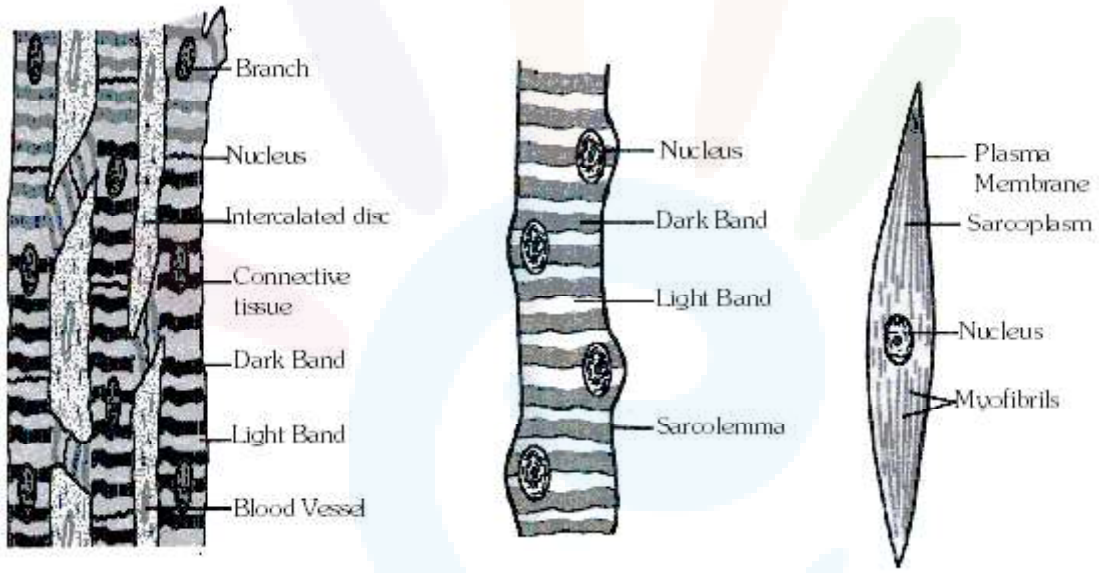
Parenchyma	Collenchyma	Sclerenchyma
The cell wall is thin.	It is thickened.	It is thickened.
It is smooth.	It is unevenly thickened.	The wall is uniformly thickened.
Wall is formed of cellulose.	The thickening is pectocellulosic.	The thickening is generally of lignin.

Q5. What are the functions of stomata ?

Ans. Functions of stomata.
(i) Gaseous Exchange. Stomata are sites where exchanges of gases (carbon dioxide and oxygen) occurs between the plant interior and external environment.
(ii) Transpiration. Major part of transpiration occurs through stomata. Transpiration removes excess water and keeps plant surfaces cool even in bright sun.

Q6. Diagramatically show the difference amongst three types of muscle fibres.

Ans.



Cardiac muscle fibres | Striated muscle fibre | Smooth muscle fibre

Q7. What is the specific function of the cardiac muscle ?

Ans. Rhythmic contraction and relaxation simultaneously throughout life without getting fa tigued.

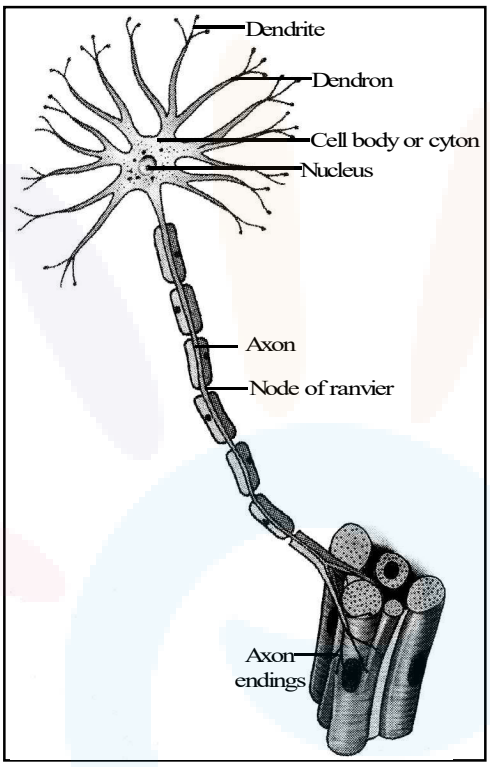
Q8. Difference amongst striated, unstriated and cardiac muscles on the basis of their structure and site / location in the body.

Ans.

Type of Muscle Tissue	Ske letal Muscle Tissue	Cardiac Muscle Tissue	Smooth Muscle Tissue
Location in body	Attached to bones of the skeleton In the case of facial muscles, attached to other tissues including skin-hence muscles "of facial expression"	Wall of the heart only	Walls of hollow internal structures, including-Blood Vessels Stomach Intestines Gall bladder Urinary Bladder Airways to the lungs, iris of eye
Voluntary or involuntary	Voluntary	Involuntary	Involuntary
Striations (alternate light and dark bands)	Yes, Striated Muscle	Yes, Striated Muscle	No, "Nonstriated"
Cell Nuclei	Many nuclei (located at periphery of long cylindrical muscles fibre)	One (centrally located) nucleus	One (centrally located) nucleus
Cell Shape	Elongated cylindrical and unbranched	Cylindrical and branched	Spindle shaped and unbranched

Q9. Draw a labelled diagram of a neuron.

Ans.



Structure of Neuron

Q10. Name the following :
(a) Tissue that forms the inner lining of our mouth.
(b) Tissue that connects muscle to bone in humans.
(c) Tissue that transports food in plants.
(d) Tissue that stores fat in our body.
(e) Connective tissue with a fluid matrix.
(f) Tissue present in the brain.

Ans.
(a) Epithelial tissue
(b) Tendon
(c) Phloem
(d) Adipose
(e) Blood
(f) Nervous tissue

Q11. Identify the types of tissue in the following : bark of tree, vascular bundle, skin, bone, lining of kidney tubule, vascular bundle.

Ans. Bark of Tree : Cork (Protective tissue), Vascular Bundle : Complex or vascular tissues, xylem and phloem. Skin : Epithelial tissue, Bone : Connective tissue with solid matrix, Lining of Kidney tubule : Epithelial tissue.

Q12. Name the regions in which parenchyma tissue is present.

Ans. It occurs in almost all nonwoody parts of the plants – cortex, pith, medullary rays of stem, cortex and pith of root, chlorenchyma of leaves, flowers, pith of fruits, etc. Epidermis is special type of parenchyma.

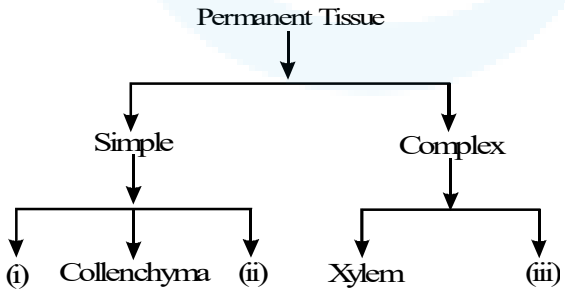
Q13. What is the role of epidermis in plants ?

Ans. (i) Protection,
(ii) Regulation of transpiration,
(iii) Formation of insulating stationary air layer with the help of hair.
(iv) Exchange of gases.

Q14. How does the cork act as a protective tissue ?

Ans. Cork acts as a protective layer because its cells are dead, filled with tannins, resin and air, impermeable due to deposition of suberin over the cell walls and absence of intercellular spaces. It is insulating (heat proof), fire proof, shock proof, water proof and repellent to microbes and animals.

Q15. Complete the Following Chart:



Ans. (i) Parenchyma (ii) Sclerenchyma (iii) Phloem.