

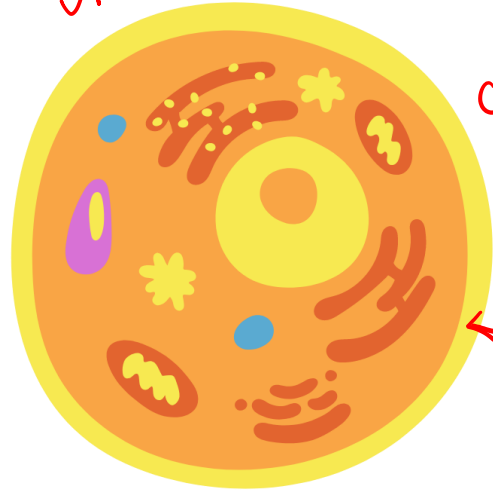


Class – 7

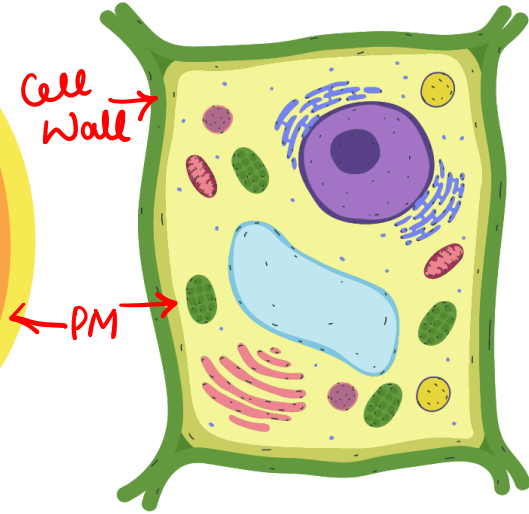
**Plant and Animal
Tissue**

Cell

Animal cell



Plant Cell



Cell Wall

PM



Structural and functional unit of life.

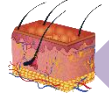
Life begins with a Single Cell

zygote



Cell

skin



Tissue

[group of cells]



Organs

[group of tissues]



Organ System

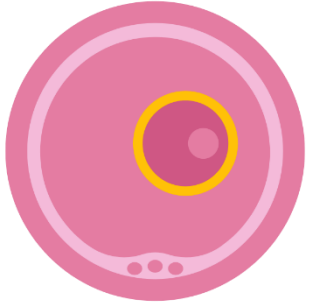
[group of organs]



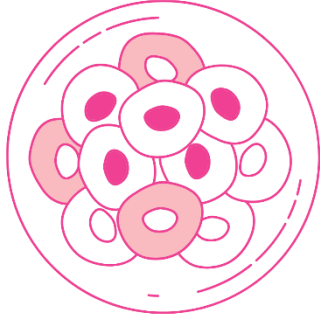
Organism

Tissues

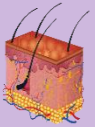
Cell



Tissue

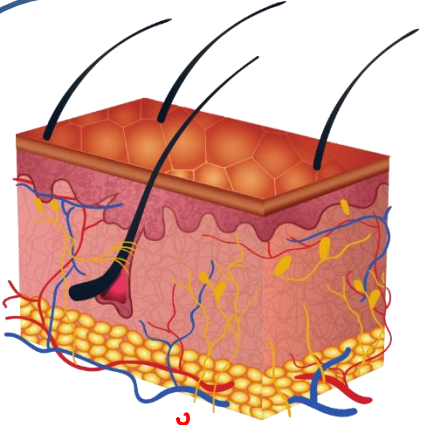


Organism



A group of cells, which are similar in structure and perform a specific function.

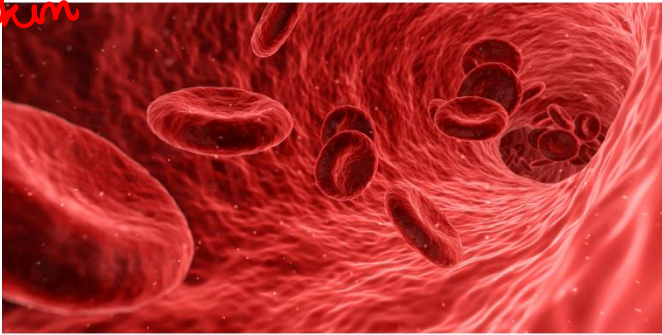
Examples of Tissues



skin



Muscle cells tissue



Blood

Kinds of Tissues

1. { • Meristematic
Tissues

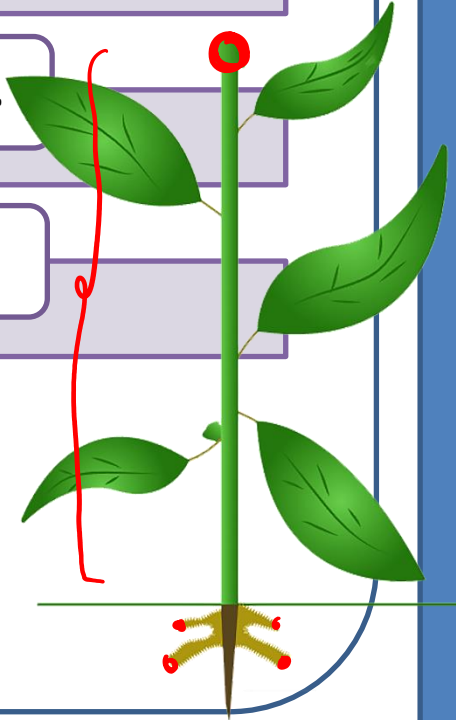
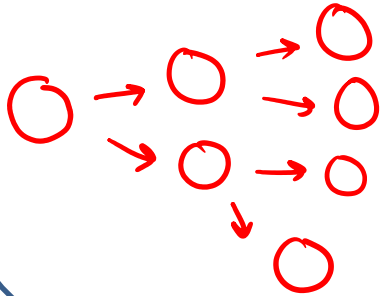
2. { • Permanent
Tissues

Meristematic Tissue

Actively dividing cells.

Function: Produce more cells.

Location: Growing tips



Characteristics

Cells are small.



Cell wall is thin.



Nuclei is large and conspicuous.



clearly visible

Cells without Vacuole. → *store food.*

Cells divide actively to add new cells.

Energy use

Permanent Tissue

Form bulk of plant body.

Do not divide. ✓

Specialised and remain same.

P.T. → grow → mature → differentiate

Group of cells where growth has either stopped completely or for the time being.

Classification of Permanent Tissue

Simple Permanent Tissue

- Protective Tissue
- Supportive Tissue

funcⁿ = ↑ protection, support

Complex Permanent Tissue

- Xylem
- Phloem

↓ conducting tissue

Protective Tissue

Thick walled cells

E.g. Surface of roots, stems and leaves



Supporting Tissue

Supporting Tissue

```
graph LR; A[Supporting Tissue] --- B[Parenchyma]; A --- C[Collenchyma]; A --- D[Sclerenchyma]
```

Parenchyma

Collenchyma

Sclerenchyma

Parenchyma

Thin-walled cells

Intercellular spaces

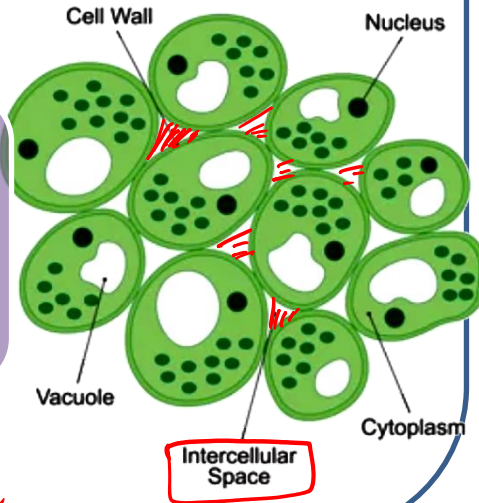
Living cells

Function: 1. Store food material. ✓

2. Provide temporary support to the plant. }

Potato → Store starch

Parenchyma Structure



Collenchyma

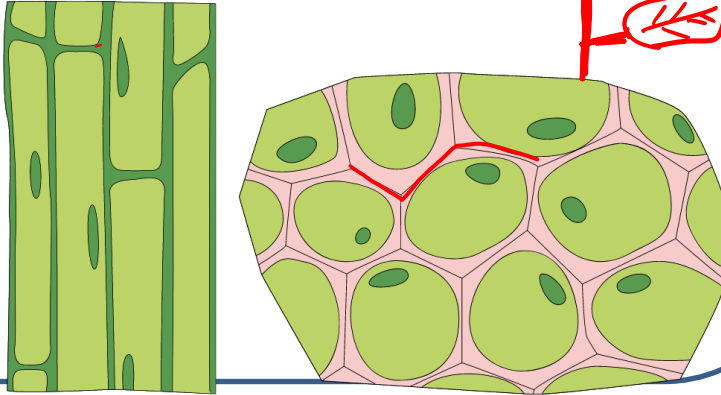
Elongated living cells

Thick at the corners

Function: Support plant parts.

→ inter cellular
spaces
missing

→ leaf stalk

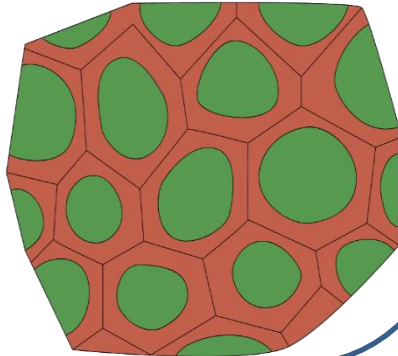
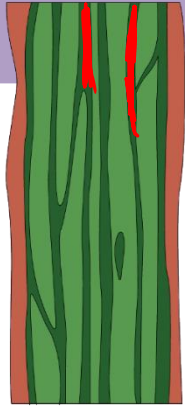


Sclerenchyma

Long, narrow, thick walled

Dead cells

Function: Provides strength to the plant parts.



Comparison

Parenchyma	Collenchyma	Sclerenchyma
→ spherical, thin walls	elongated cell, thick cell wall	Long, narrow, thick cell wall
→ Inter cellular spaces	Absent	Absent
→ Living	Living	Dead
→ throughout the plant	→ veins, veinlets, young stem	→ wood, bark.
→ storing food, photosyn., respiration	→ flexible stem	→ rigid.
→ buoyancy in aq. plants	mech. support	mech. support

Complex Permanent Tissues

**Conducting Tissue/Vascular
Tissue**

**Provide a passage for the
transport.**

[Water,
food]

Types: Xylem and Phloem

Xylem

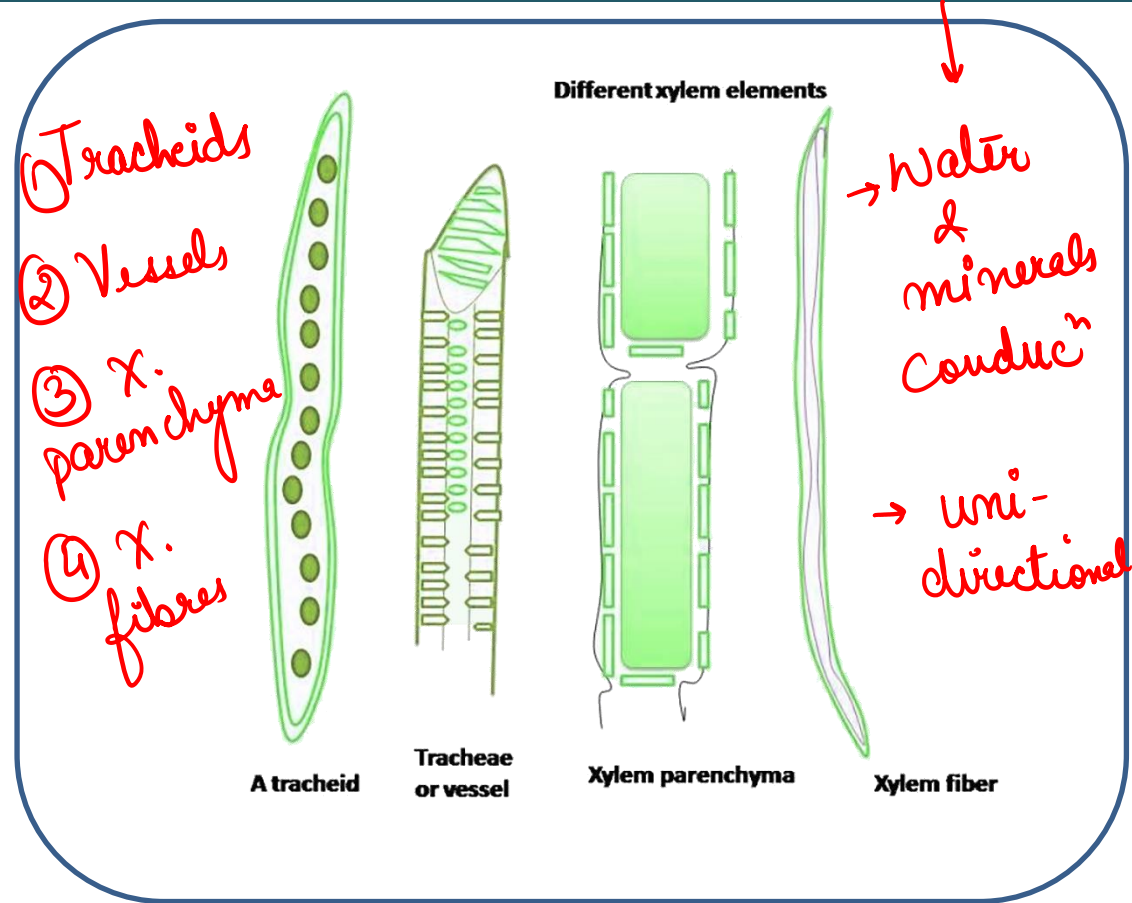
Thick-walled, tubular and dead cells

Placed end-to-end

Partitions dissolve to form long channels



Xylem – Components & Functions



Phloem

Living tubular cells

① Sieve tube

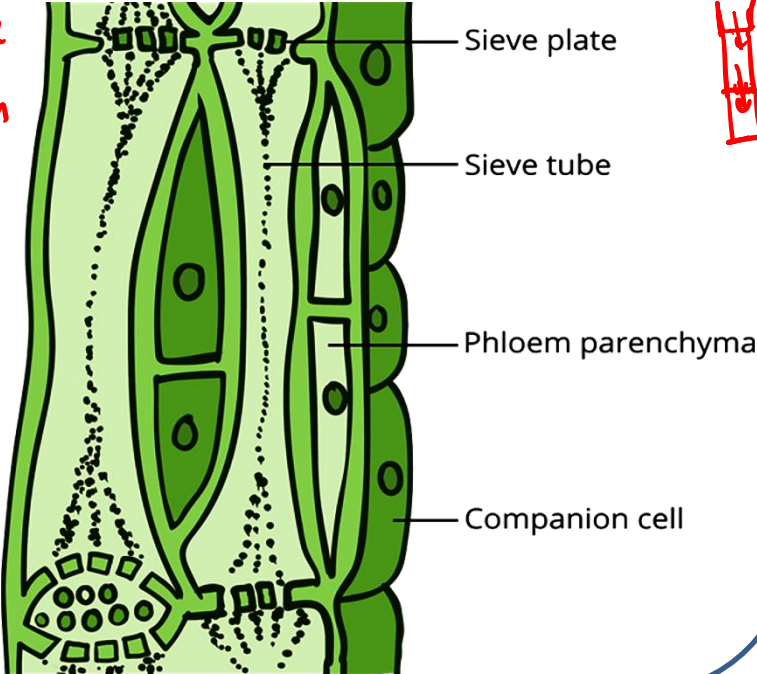
② Companion cells

③ P. parenchyma

④ P. fibres

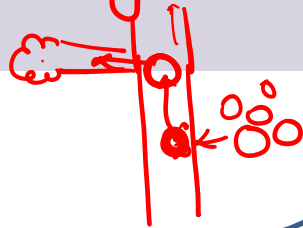
→ food conducⁿ

→ bidirecⁿ

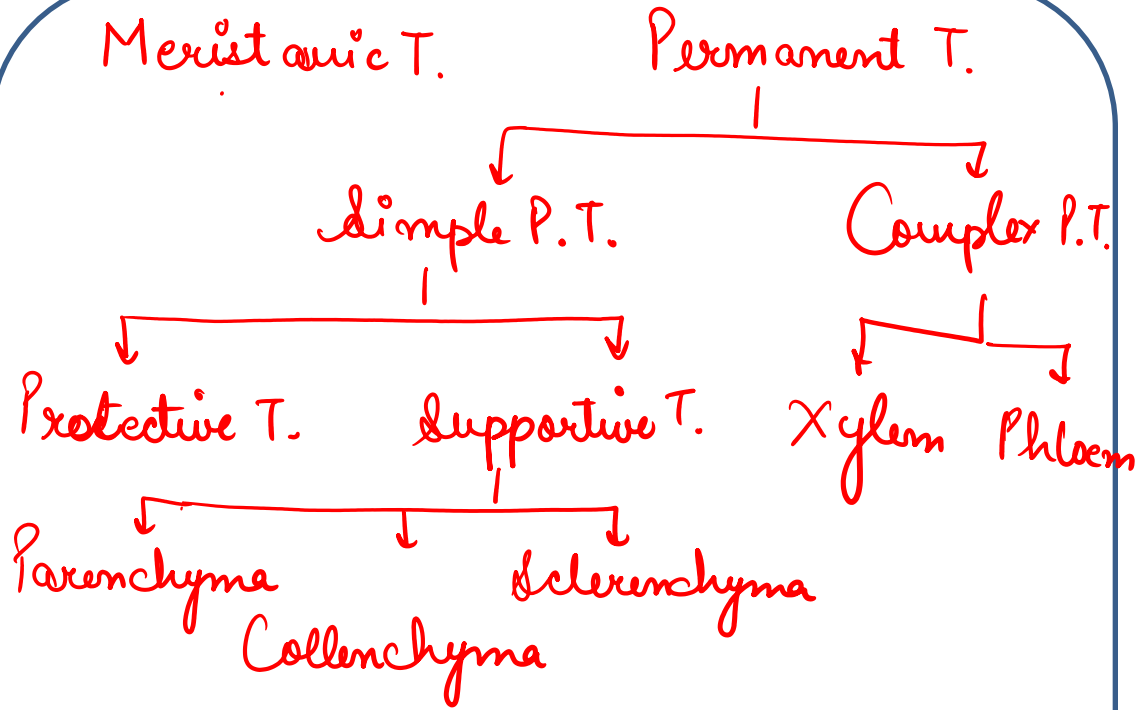


Difference b/w Xylem and Phloem

Xylem	Phloem
① Transport of water & minerals.	① Transport of food.
② Unidirectional	② Bidirectional
③ Dead cells	③ Living cells.



Plant Tissues – Quick Recap



Question 1:

A group of similar cells to perform a specific function forms a

organ



organ system



species



tissue



Question 2:

Define the following terms:

Tissue:

group of cells which are similar in structure & perform same funcⁿ

Organ:

group of tissues together
similar
make an organ

Question 3:

State whether true or false:

A tissue is formed of only one type of cells.

T

Only one type of tissue forms an organ.

F

Mexi...
Permanent tissue is made up of undifferentiated and dividing cells.

F

Phloem is formed of dead tubular cells.

F

Question 4:

Fill in the blanks:

A group of different tissue working together to perform a function is called an organ.

Xylem and phloem form the vascular/
conducting tissue.

Conducting tissue is also called vascular tissue.

Parenchyma is composed of large living cells.

Question 5:

What is meristematic tissue? How is it different from permanent tissue?

M.T. → actively dividing cells.

P.T. → differentiated cells,
non-dividing

Question 6:

Which living material would you take to demonstrate meristematic tissue?

Sprouts .



Question 7:

What is the function of meristematic tissue?

→ length, diameter/
thickness inc.

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channels



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Thank You