

① Apical - Present on the apices (apex) of plants
[In stem apex and in root apex]

Root apex - Under soil/earth surface -
growth.

Stem apex - ~~Under~~ length in air

Thus apical meristem is responsible
for growth in length.

• Intercalary = Responsible for inter-nodal growth

• Lateral = Responsible for growth in girth
[secondary growth].

Meristem = Cambium (Cork Cambium)

② Permanent tissue

Nature and non-dividing group of cells

It has three types -

- a) Parenchyma
- b) Sclerenchyma
- c) Collenchyma

a) Parenchyma - 62 (a) and 61 (a) (b) (c)

They are thin walled living tissue.

* Chemical - Cellulose

* Main function - food storage

* It is found in under
ground stems of Rhizome,

Date _____
Page _____

Tuber, bulb, corm etc.

* Also found in ~~roots~~ of
underground roots of
conical (Carrot) Fusiform (Red
Napiform (Turnip) etc.

* Cells generally circular
(isodiametric) living
characteristics - nucleus
prominent

* Sometimes shape of
parenchyma changes -

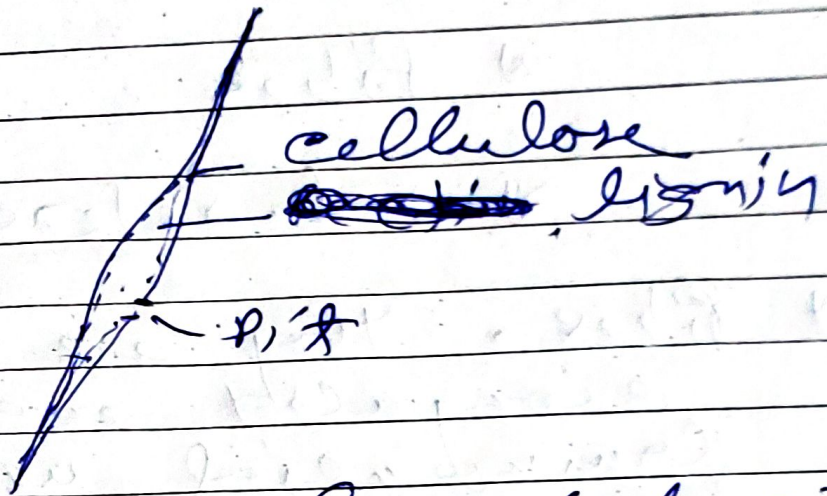
* Elongated parenchyma
= Prosenchyma

* Aerenchyma - parenchy-
-ma with air chambers.
Helps hydrophytes in
floating (also in gaseous
exchange).

* Idioblast parenchyma -
parenchyma with organic
substances

* Chlorenchyma - paren-
-chyma with chlorophyll.
Helps in photosynthesis

b) ~~Sub~~ Sclerenchyma



They are long (elongated) in shape.

Shape - spindle shaped generally means both ends tapering and wider in the middle

Pits = present

They are thick walled lignified dead tissue provides mechanical support.

Main function - Mechanical support

Main chemical - cellulose + lignin
It has two