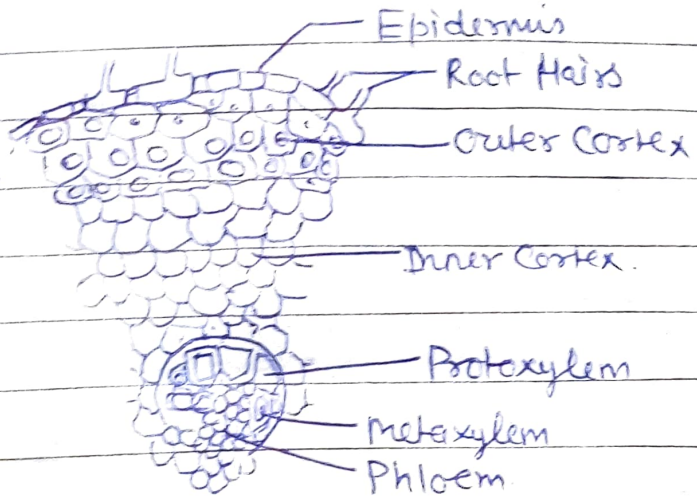
Internal structure – Root – (Morphology)

> A transverse section of root shows three distinct regions – epidermis, cortex and stele.

> The epidermis is single layered made up of thin walled cells in the apical region of the root.

> Some epidermal cells form root hairs which are generally in pairs

> The cortex is composed of parenchymatous cells. Some outer layer of cortex become thick walled which provide mechanical support to the root.



Transverse Section of Root :-

> The central part of the root is occupied by a protostele which monoarch or triarch in older roots.

> The xylem is e or u shaped and phloem lies between the arm of xylem.

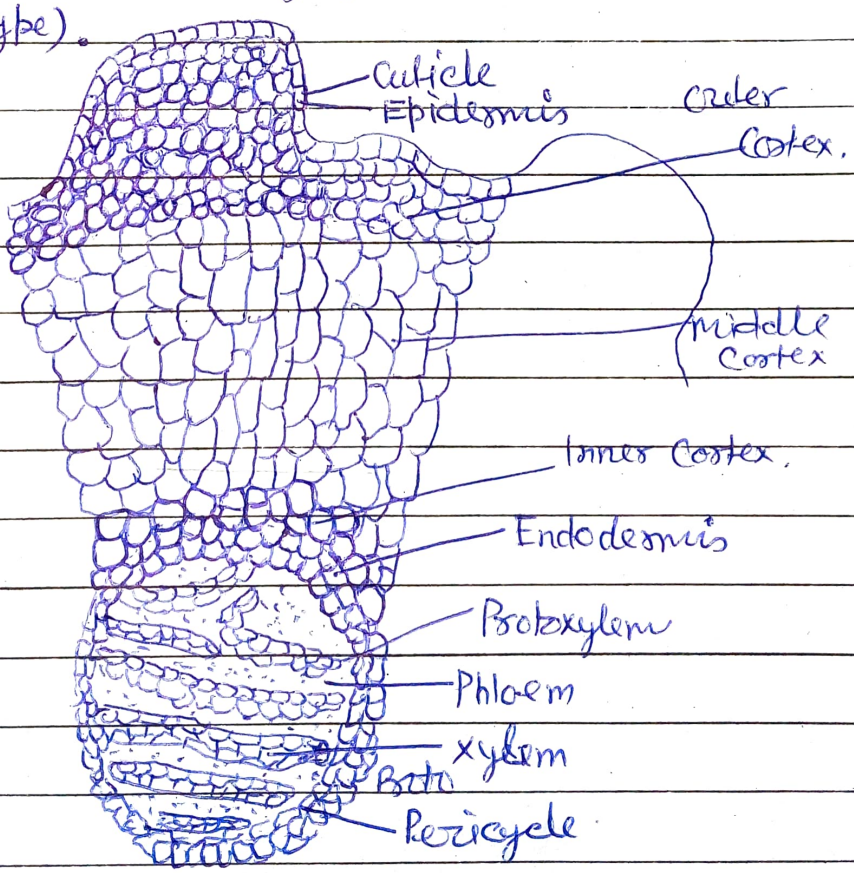
Stem -

> The stem is also differentiated into three tissue systems. epidermis, cortex and stele. The epidermis forms the outermost protective layer which is thick and cutinized.

> Stomata are also present in the epidermis of the young stem.
The cortex has three distinct zone, chlorenchymatous
> in hypodermal origin, sclerenchymatous around stele and parenchymatous in between these two zones.

> The innermost layer of the cortex forms endodermis composed of thin walled cells usually with casperian bands at younger stage.

> Endodermis is followed by 2-6 layered pericycle.
> All the species of Lycopodium have a protostele (Plectotype).



Transverse section of Stem -