

Q. Give a brief account of the life history of *Gnetum* in what respect it resembles with Angiosperm?

ANS: *Gnetum* is one of the three genus of the order Gnetales. It is represented by nearly 40 sps as tree and climber. These are distributed to Africa, China, Malaysia, Pakistan, Burma, Philippines and India. In India few sps are common (Hardwajin 1988)

- i) *Gnetum gnemon*
- ii) *Gnetum montana*
- iii) *Gnetum ula*
- iv) *Gnetum contractum*
- v) *Gnetum latifolium*

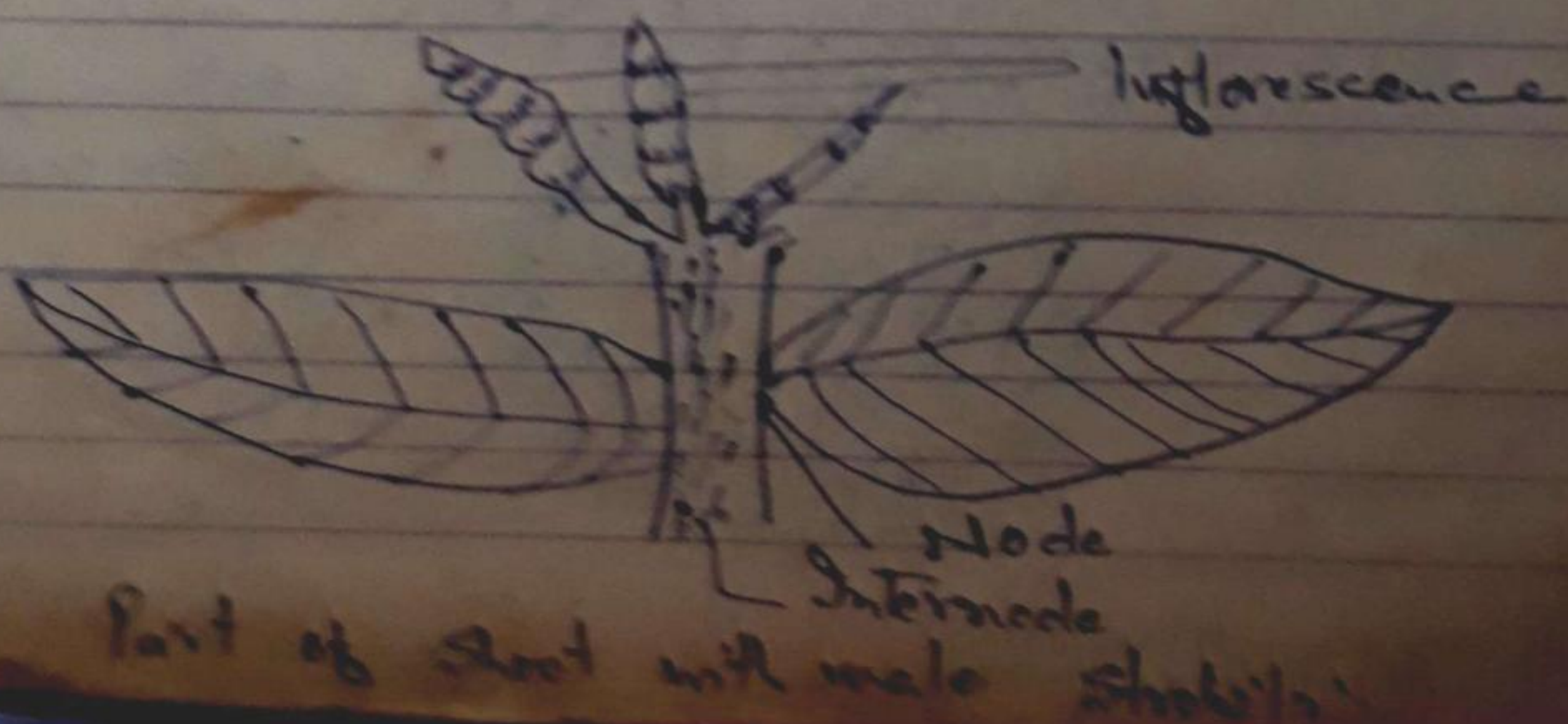
Its life cycle may be divided into two phases

- i) Sporophytic
- ii) Gametophytic

Sporophytic Phase:

i) Vegetative body: As Habitat - Almost all sps are woody but a few are small and shrub.

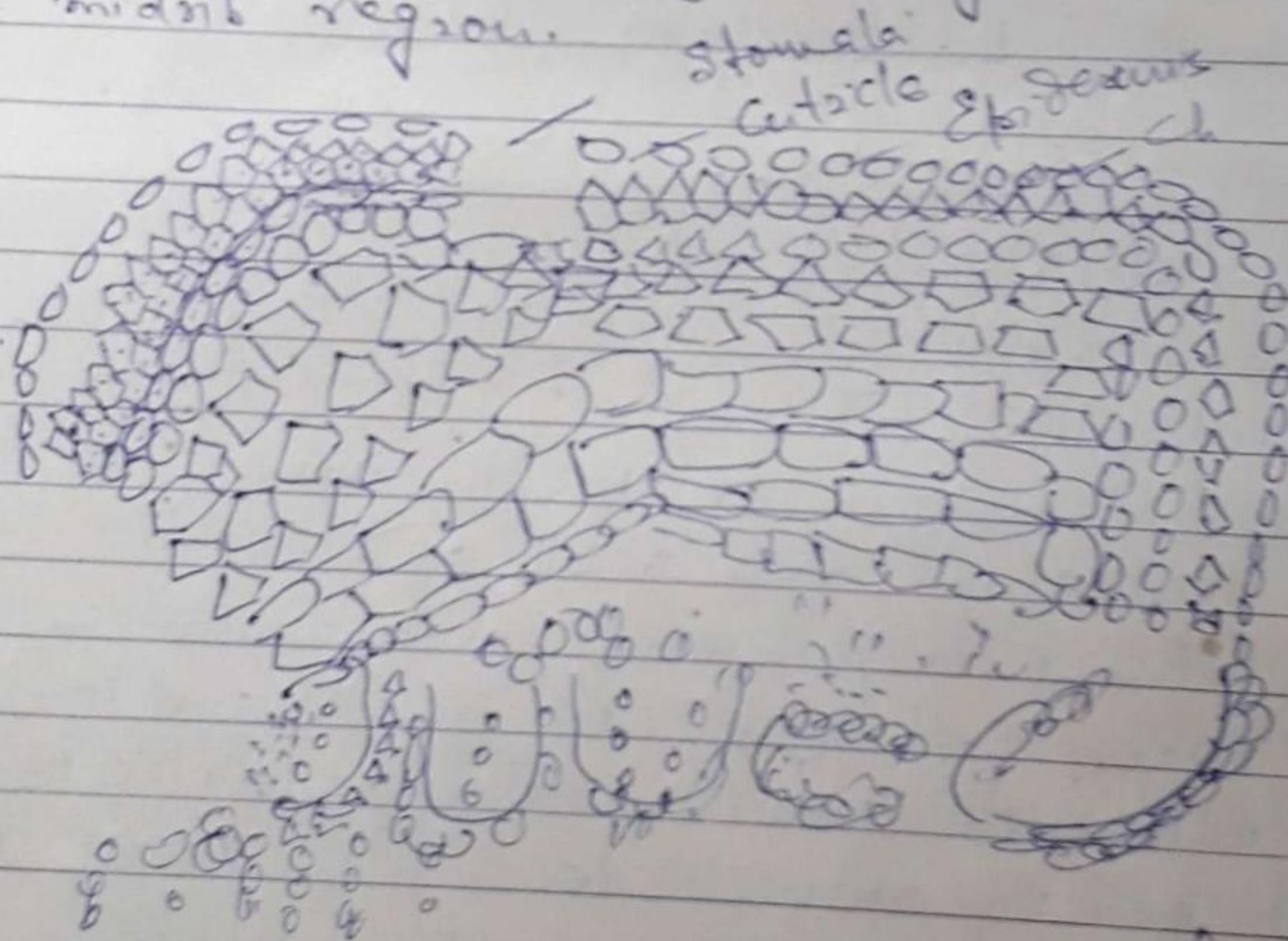
ii) Body: Plant body is woody and climber with dimorphic branches, dwarf shoot of limited growth and long shoots of ultimate unlimited growth. Stem are articulated, leaves are arranged in opposite decussate pairs and are similar to angiospermic one having broad lamina, Reticulate venation and haplo^{cratic} stomata.



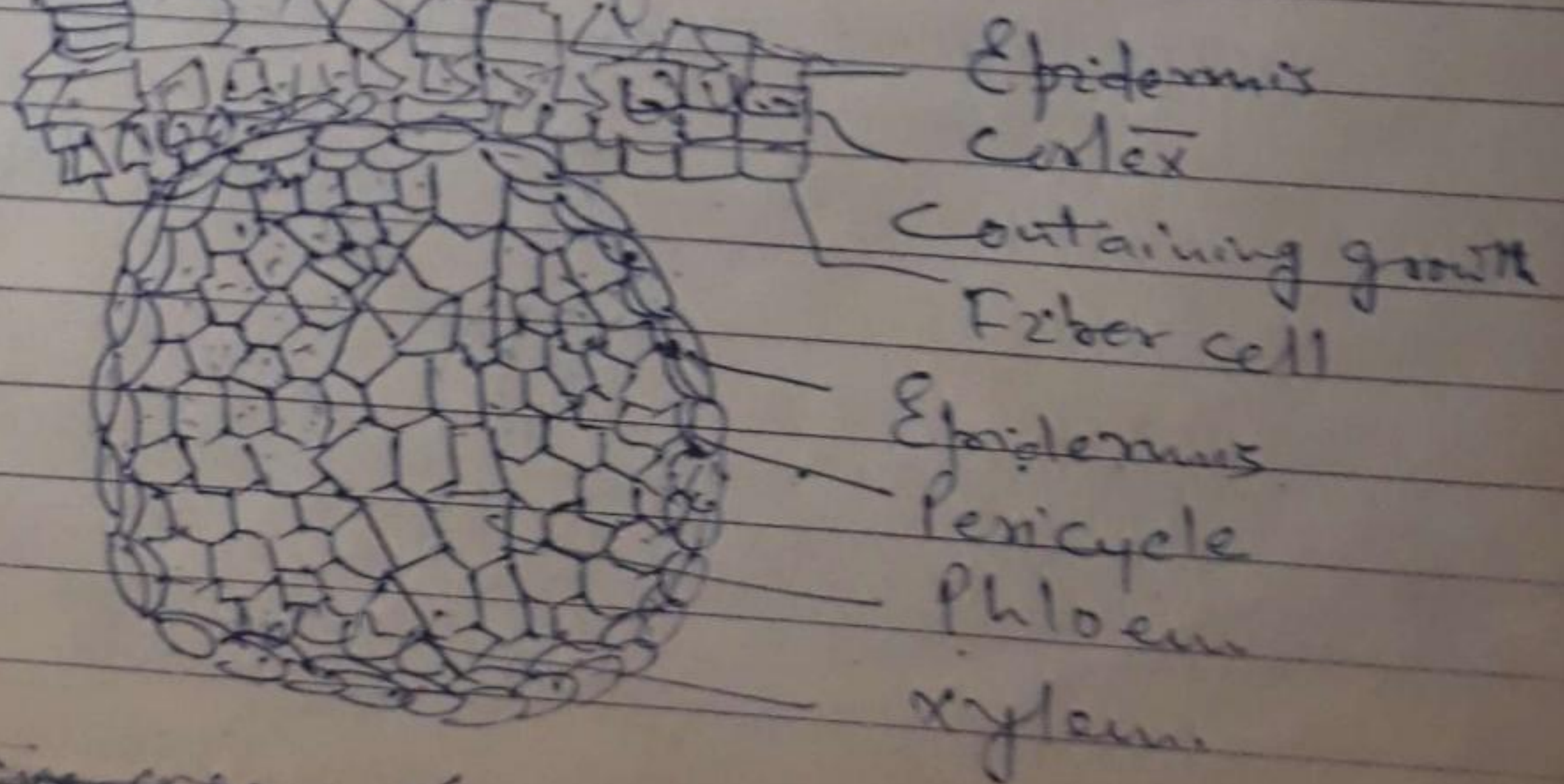
Anatomy of Body =

Root is dorsarch and resembles with angiosperms. Xylem is pitted, sec growth is prominent, both vessel and tracheid are found in the wood but there is a large perforation on end wall of the vessel. Laticiferous ducts are present in cortex and pith. The Phloem has no fibre stem has also conjoint collateral and 20 to 24 eudarch vascular bundle. Leaf is dorsiventral having internal structure similar to that of the higher Angiospermic plant. In Guettarda stomatal development is of syndetocheilic. Scattered fibre with lignified walls occur in grooves around the middle region contrast to leaf of higher plants. Latex tubes are also found.

Embryo consists of two cotyledons scattered around the midrib region.



1.5. Young stem of Guettarda ss.



Reproductive organ: T.S. of young root of Guettarda

Reproductive Organ

The plant is dioecious. The reproductive organ are male and female inflorescence (strobili) having whorls of male and female flower. Each strobilus consist of stout axis with pairs of decussate bracts which are connate to form cupule or collars.

(A). Male inflorescence (Strobilus): Male inflorescence has 10-15 collars in axis of which arise several whorls of male flower in basipetal succession. In *Gnetum gnemon*, a few abnormalities in the strobili have been reported. Each male flower has a microsporangiosphere, bearing one to two sporangia surrounded by tubular perianth. Some abortive ovules may also represent.

Within the microsporangium the outermost layer archesporium divides to form the paraxial and sporogenous cell. The tapetal cells are generally binucleate but they unite to form polyploid nuclei. As the microsporangia attain maturity, microspores enlarges and are liberated by branching the original mother cell.