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MATRIC NO; 19/MHS01/265
COURSE: BIO 102 ASSIGNMENT

1. How are fungi important to mankind?
- Biological insecticides; As animal pathogens, fungi help to control the population of damaging pest. These fungi are very specific to the insects they attack; they do not infect animals or plants.

- Farming; The mycorrhizal relationship between fungi and plant roots is essential for the productivity of farm land.

- Food; Fungi figure prominently in human diet. Fermentation of grains to produce beer and of fruits to produce wine is an ancient art that humans in most cultures have practiced in millennia.

- Medicine; Many secondary metabolites of fungi rate of great commercial importance. Fungi naturally produce antibiotics to kill or inhibit the growth of bacteria, limiting their competition in the natural environment.

2. Cell structure of a unicellular fungus with a well labelled diagram.

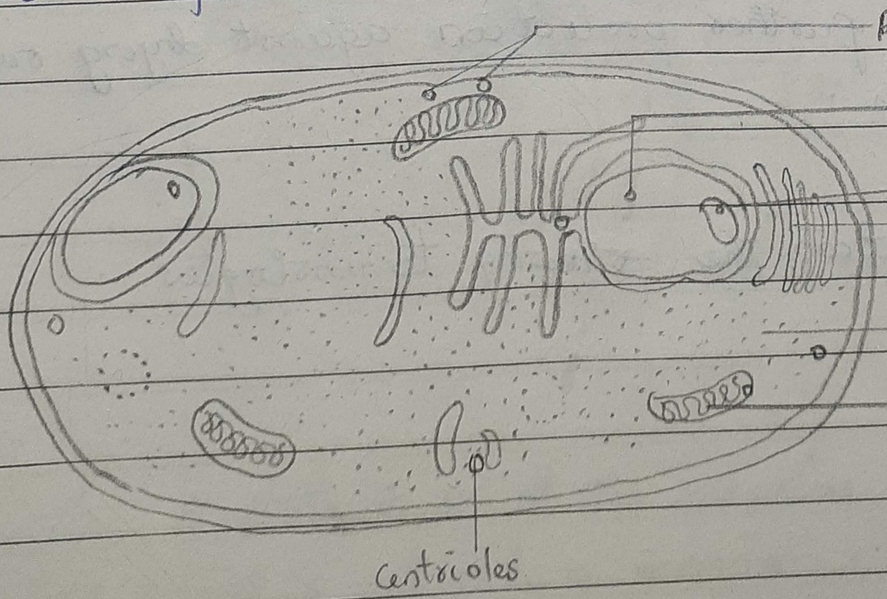

DIAGRAM OF A FUNGUS

3. Outline the sexual reproduction in a typical filamentous form of fungi

- Plasmogamy; The fusion of two protoplasts brings together two compatible haploid nuclei. At this point, two nucleas types are present in the same cell but the nuclei have not yet fused.
- Karyogamy results in the fusion of these haploid nuclei and the formation of a diploid nucleus. The cell formed by karyogamy is called zygote. In most fungi, the zygote is the only cell in the ~~most~~ entire lifecycle that is diploid.

In the lowes fungi, karyogamy usually follows plasmogamy almost immediately. In the more evolved fungi however karyogamy is separated from plasmogamy. Once karyogamy has occurred, meiosis (cell division that reduces the chromosome number to one set per cell) generally follows and restores the haploid phase. The haploid nuclei that results from meiosis are generally incorporated in spores called meiospores.

4. How do bryophytes adapt to their environment?

Adaptations to land.

- They have a waxy cuticle that prevents the body, the zygote and the embryo from drying out.
- Spores are dispersed by the wind.
- Gametangia provided further protection against drying out specifically for the plants gametes.

5. Describe with illustration the following terminologies.

a) eusteles
b) atactostele
c) siphonostele
d) dictyostele.

- Eustele; a stele typical of dicot plants that consist of vascular bundles of xylem and phloem strands with parenchymal cells between the bundles.

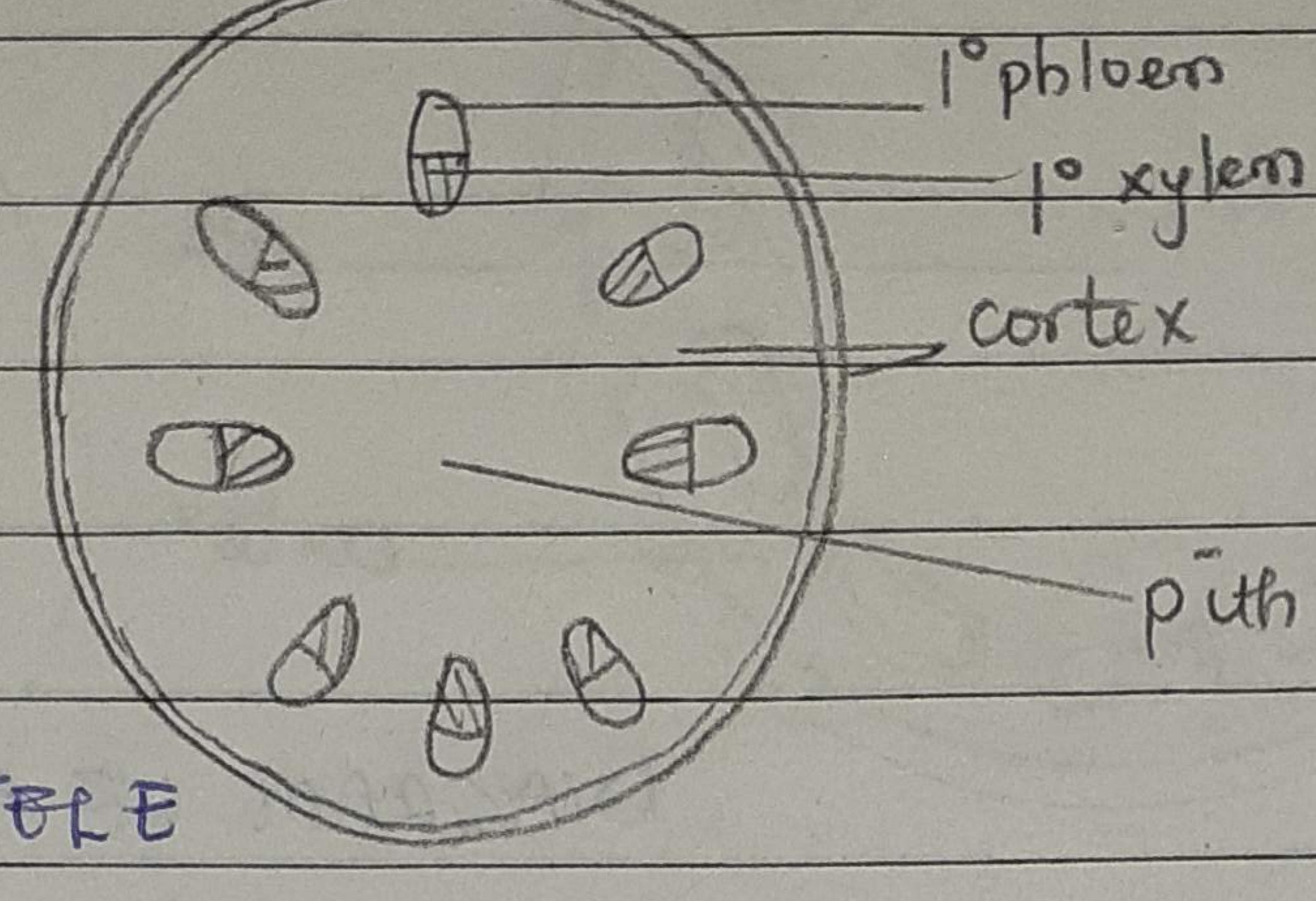

DIAGRAM OF AN EUSTELE

- Atactostele; A type of eustele found in monocots in which vascular tissue in the stem exists as scattered bundles.

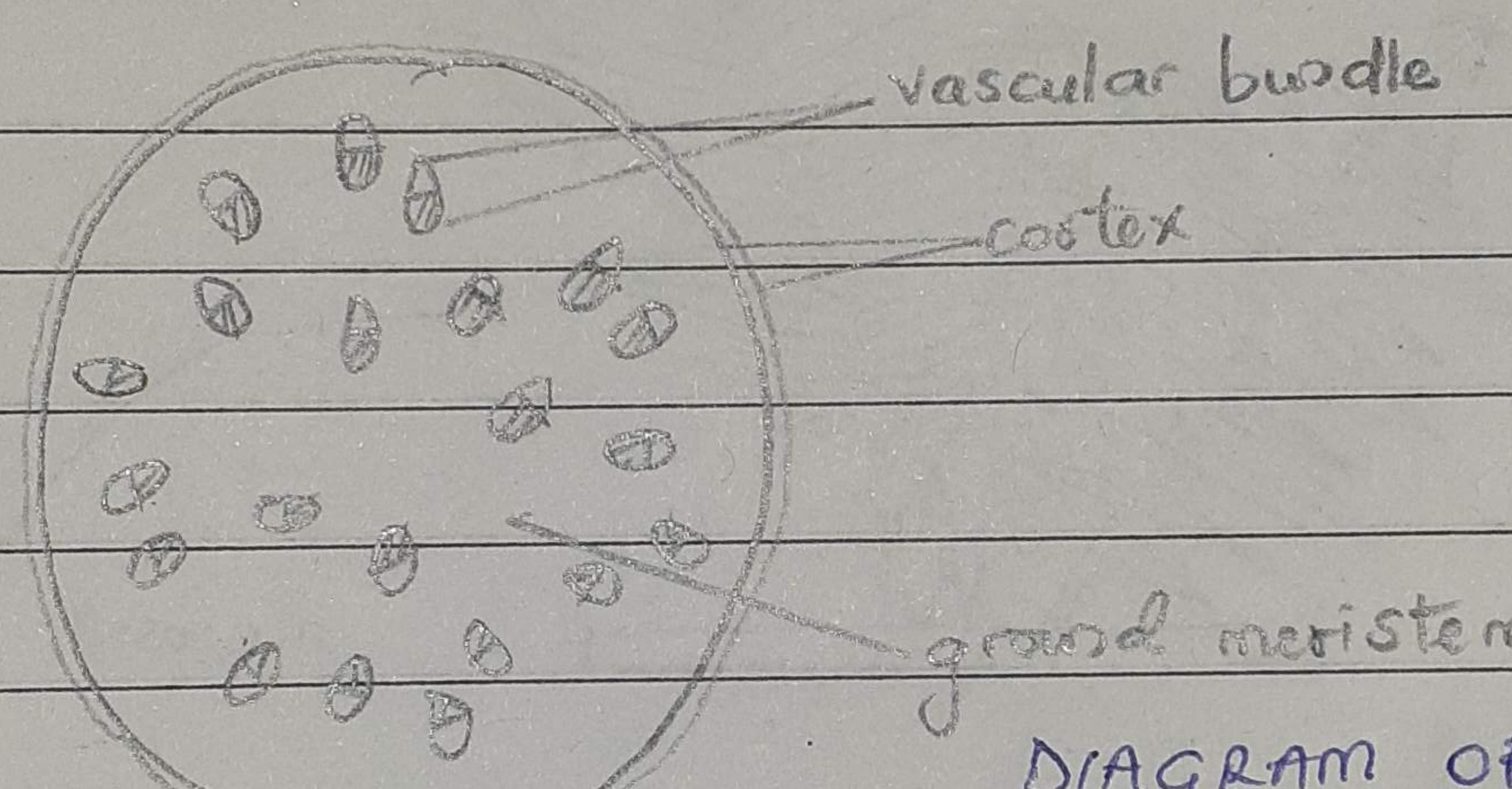

DIAGRAM OF AN ATACTOSTELE.

- Siphonostele; A stele consisting of a core of pith surrounded by concentric layers of xylem and phloem.

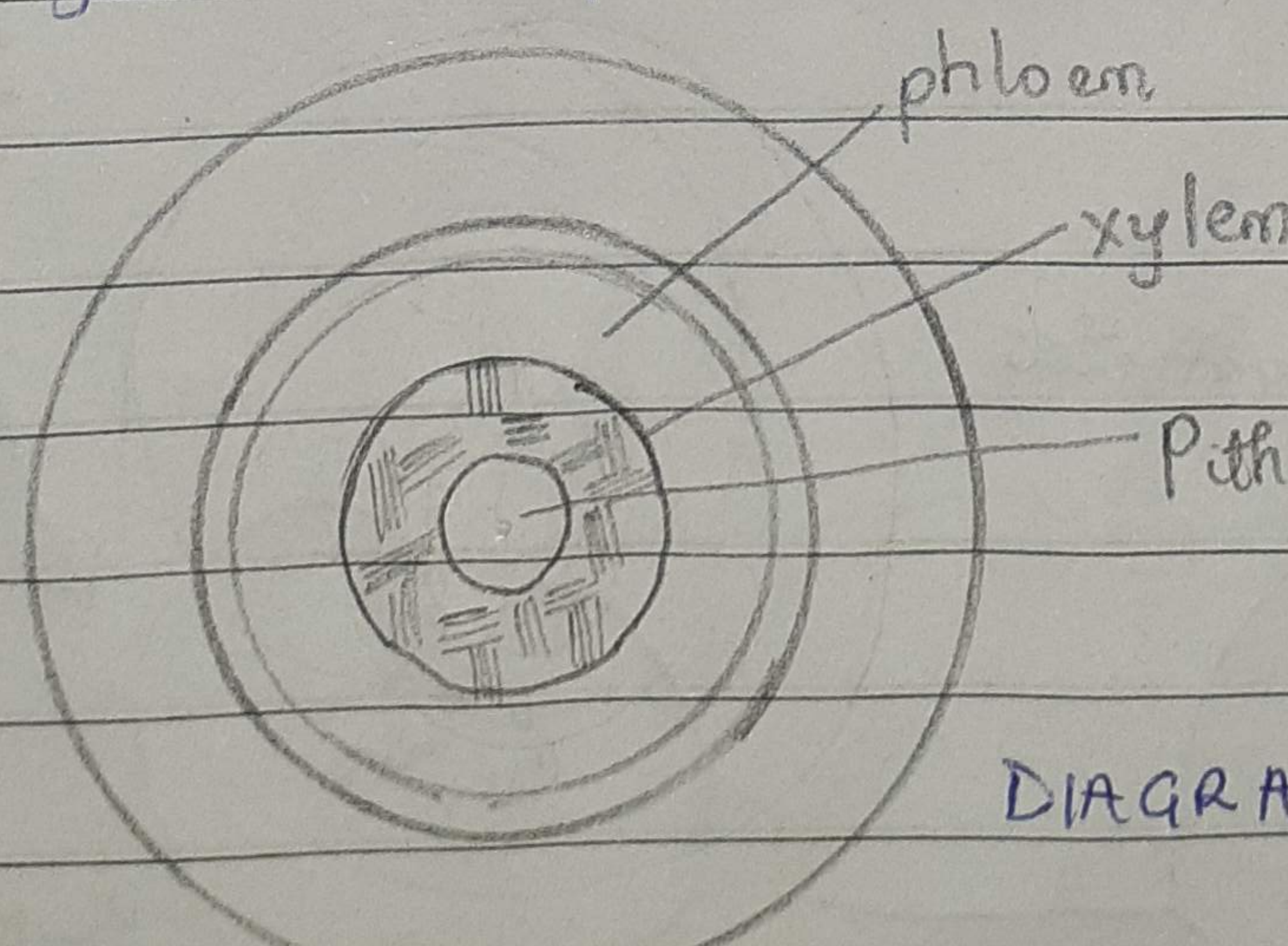

DIAGRAM OF A SIPHONOSTELE.

- Dictyostele; A stele in which the vascular cylinder is broken up into a longitudinal series or network of vascular strands around a central pith (as in many ferns)

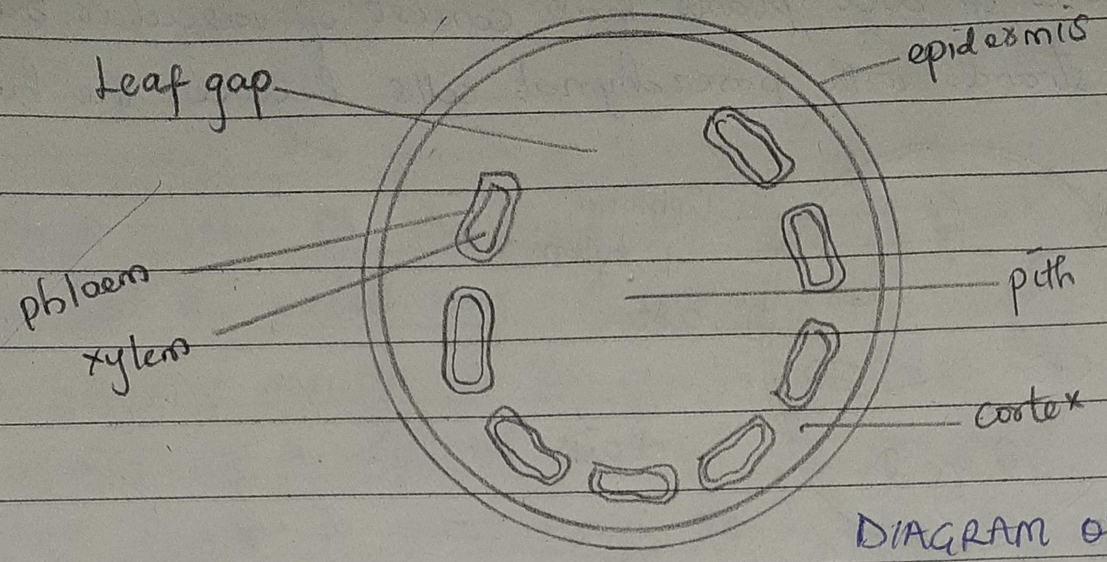

DIAGRAM OF A DICTYOSTELE

6. Illustrate the life cycle of a primitive vascular plant