

NAME: SONEINDE OLUWASEMILDORE AHUO LUWAPO

COLLEGE: MEDICINE AND HEALTH SCIENCES

DEPARTMENT: MEDICINE AND SURGERY

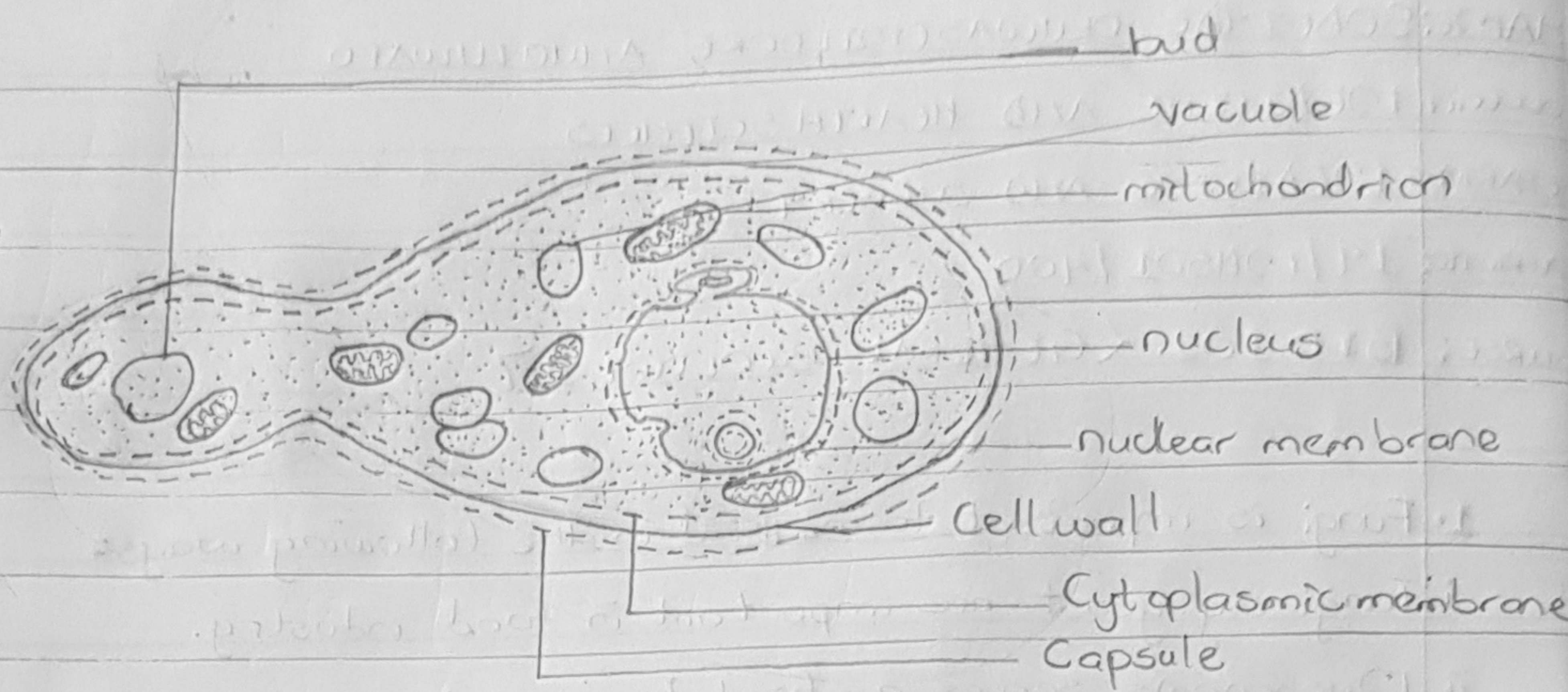
INDEX NO: 19/MSHSD1/400

COURSE: BIO 102. (GENERAL BIOLOGY II)

1. Fungi is important to mankind in the following ways:

- i) Fungi e.g yeast are important in food industry.
- ii) Mushrooms serves as food to many human society.
- iii) Species of fungi e.g *Penicillium notatum* produce important antibiotics
- iv) Fungi are responsible for the mediation of decay of organic matter.
- v) Some fungi are parasites ^{to} ~~for~~ some certain pests such as houseflies, grasshoppers and therefore constitute important biological control agents in regard to such pests.

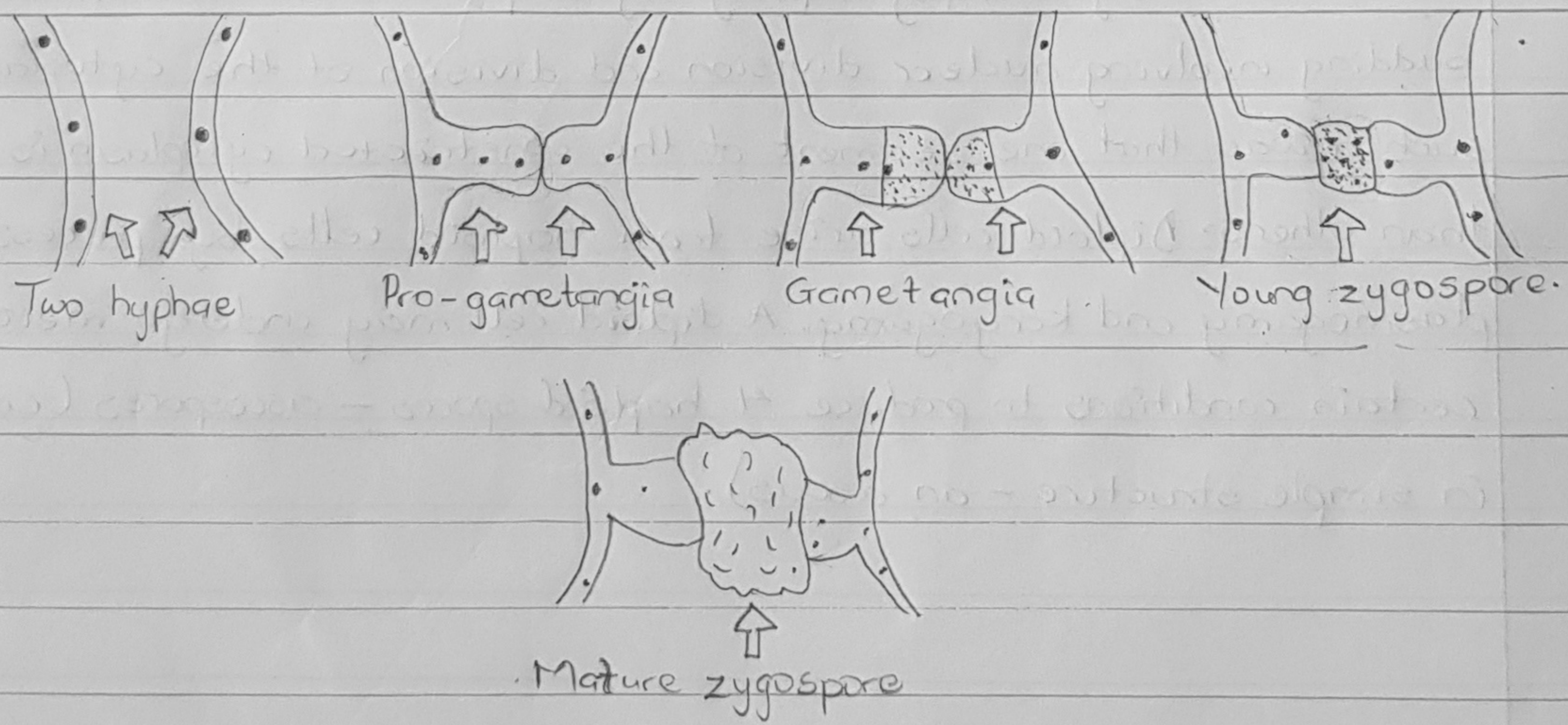
2. *Saccharomyces cerevisiae* (Bakers' yeast) is one of the best known examples of unicellular forms in fungi. The cell structure is very simple, though the organism is one of the more advanced fungal forms from the point of view of its spore-producing structures. Cell exists in diploid/haploid states. Under favorable ^{environmental} conditions, in both states, they multiply rapidly by simple mitotic cell divisions - budding involving nuclear division and division of the cytoplasm in such a way that one segment of the constricted cytoplasm is smaller than others. Diploid cells arise from haploid cells by processes of plasmogamy and karyogamy. A diploid cell may undergo meiosis under certain conditions to produce 4 haploid spores - ascospores (contained in simple structure - an ascus).



The Structure of *Saccharomyces cerevisiae* undergoing asexual reproduction (*Rhizopus stolonifer*)

3. Sexual reproduction in a filamentous form of fungi ~~Rhizopus~~:

Sexual reproduction occurs when two mating types of hyphae grow in the same medium. Chemical interaction in the two mating types of hyphae ^{induces} ~~produces~~ growths perpendicular to the hyphae in opposite directions. These growths are delimited by a wall such that many nuclei are isolated in what is called a gametangium. The two gametangia fuse (plasmogamy) and a zygote is formed which may undergo prolonged dormancy or resting stage. The nuclei in the zygote fuse in twos and undergo meiosis independently. The zygote germinates under favorable conditions to produce a fruiting which at maturity liberates the haploid spores.



Sexual reproduction in *Rhizopus stolonifer*

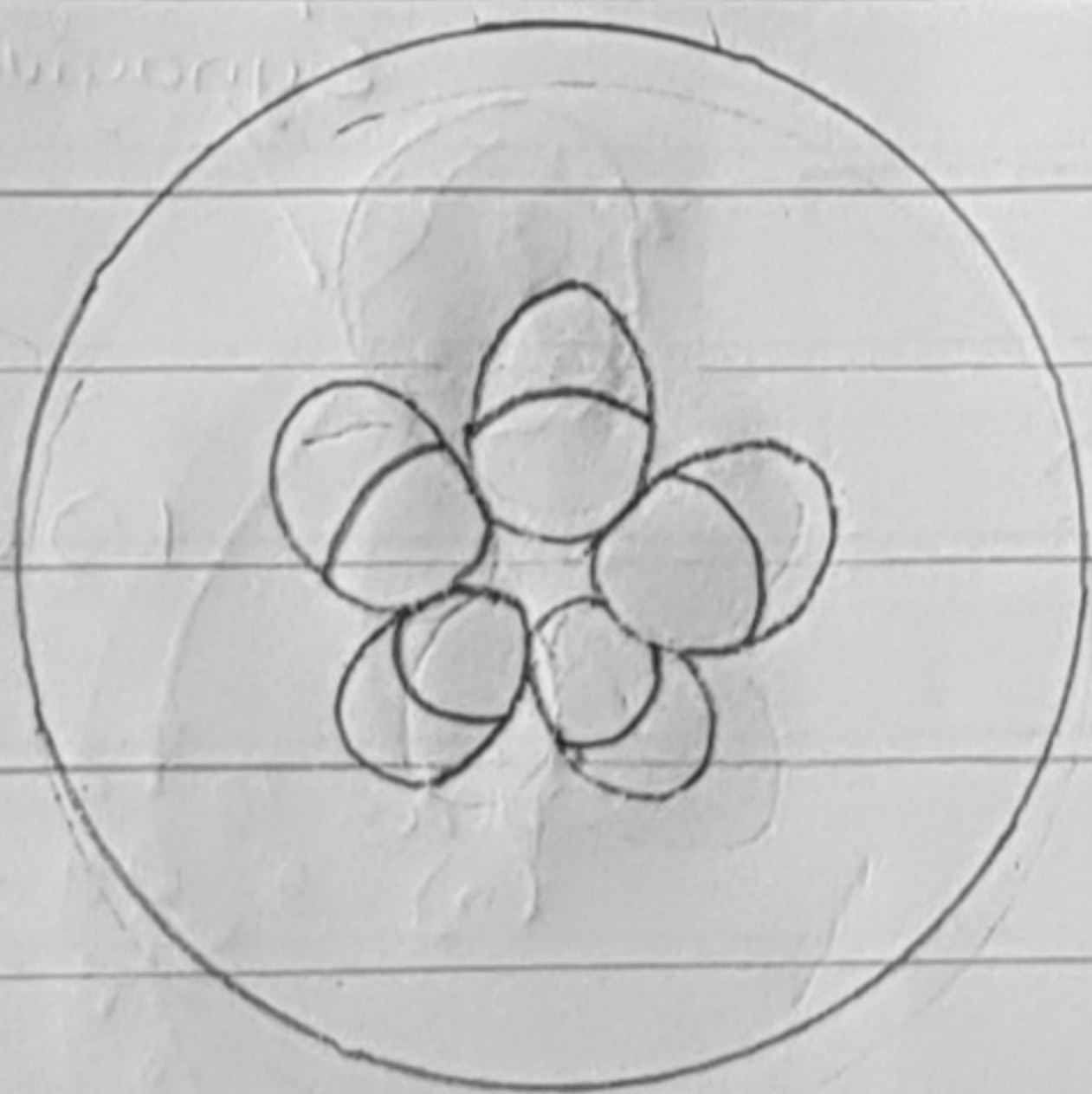
4. The ways Bryophytes adapt to land habitat are:

i. They have definite structures for water and nutrient absorption from the soil; therefore the plant body is divided into two (an aerial portion and a subterranean portion). The subterranean portion is the rhizoid and is not a true root as the case of land plants that are advanced.

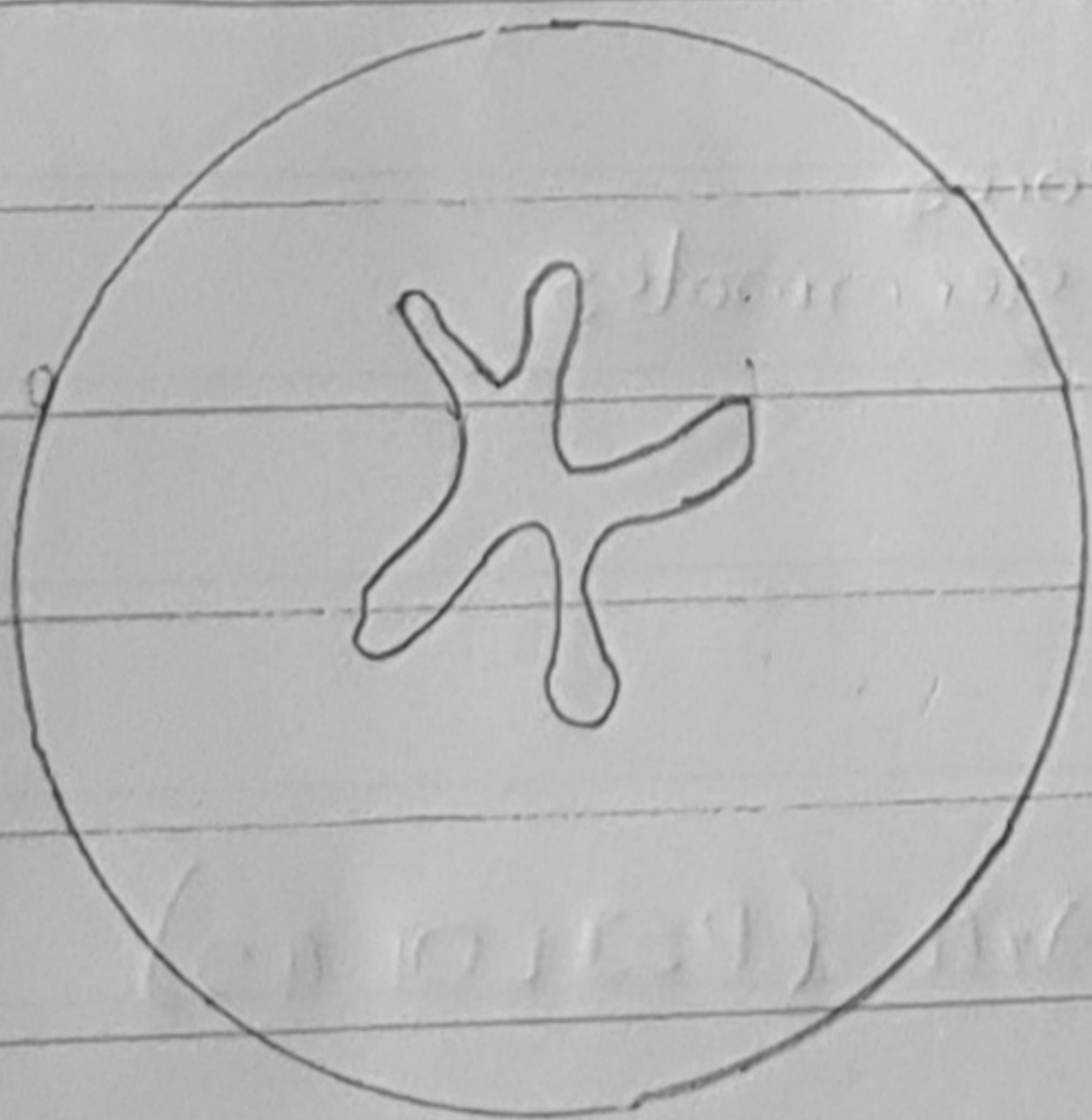
ii. The aerial portion being exposed to the atmosphere demands some modifications that prevents excessive loss of water through the body surface (i.e. desiccation).

iii. Some other modifications that permit elimination of excess water from the plant body and not only exchange of gases between the internal parts of the plants and the atmosphere therefore openings are available on the aerial ^{parts} of the plant.

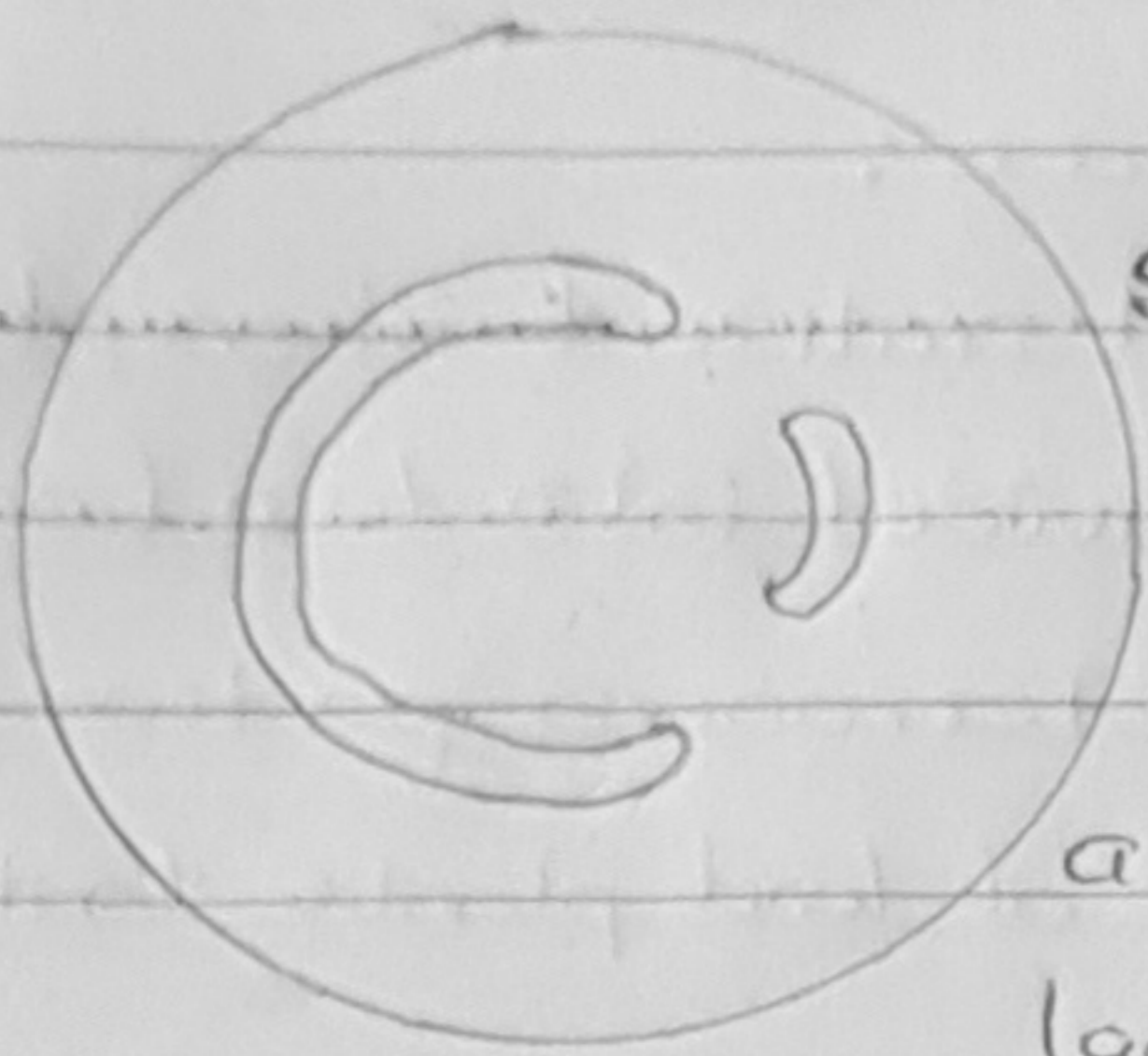
5a. Eustele: This is a type of siphonostele in which the vascular bundles are discrete, concentric collateral bundles of xylem and phloem.



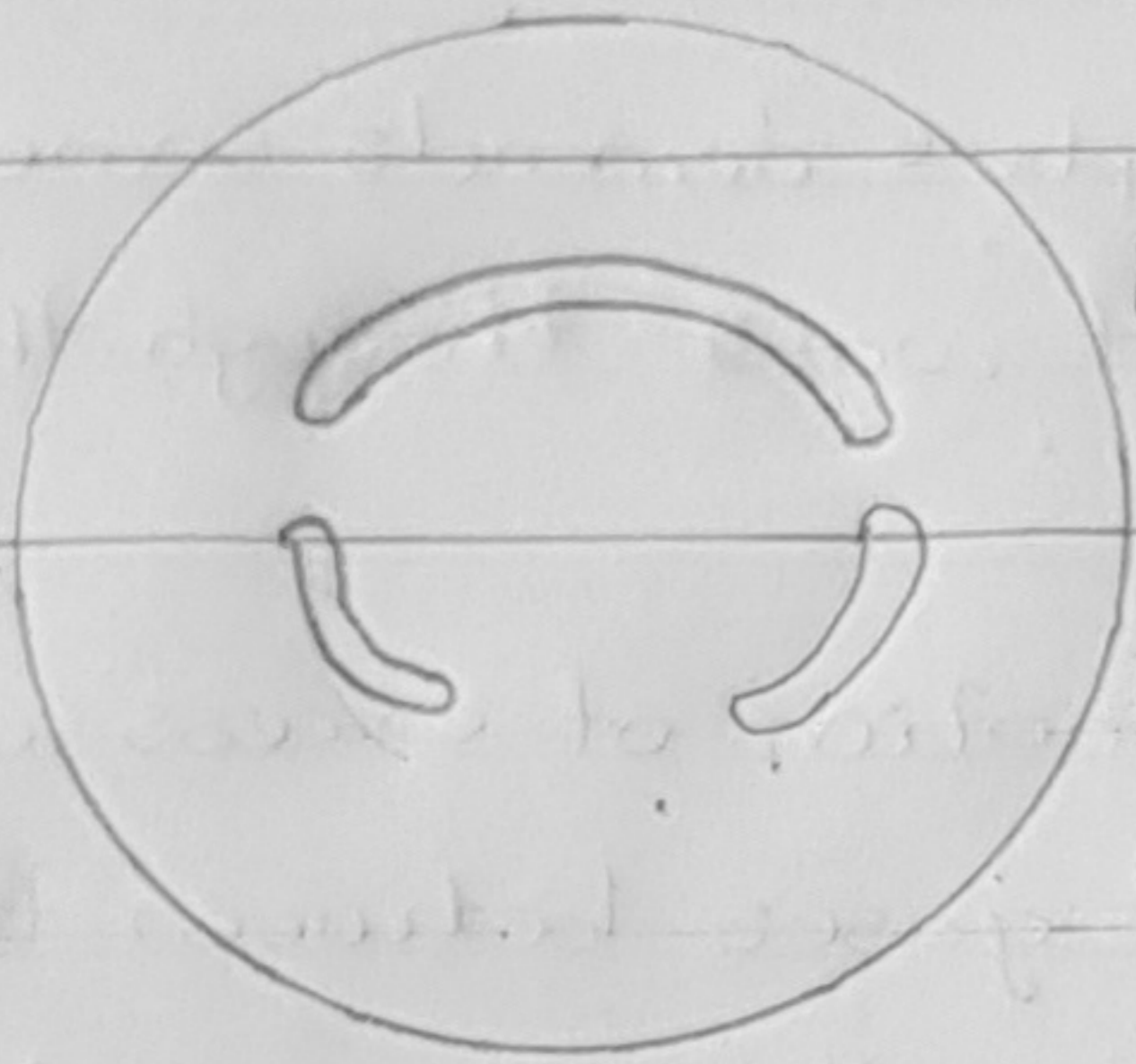
b.



Actinostele: A vascular core (as in most roots and some stems) having the xylem and phloem in alternating or radial groups within a pericycle.

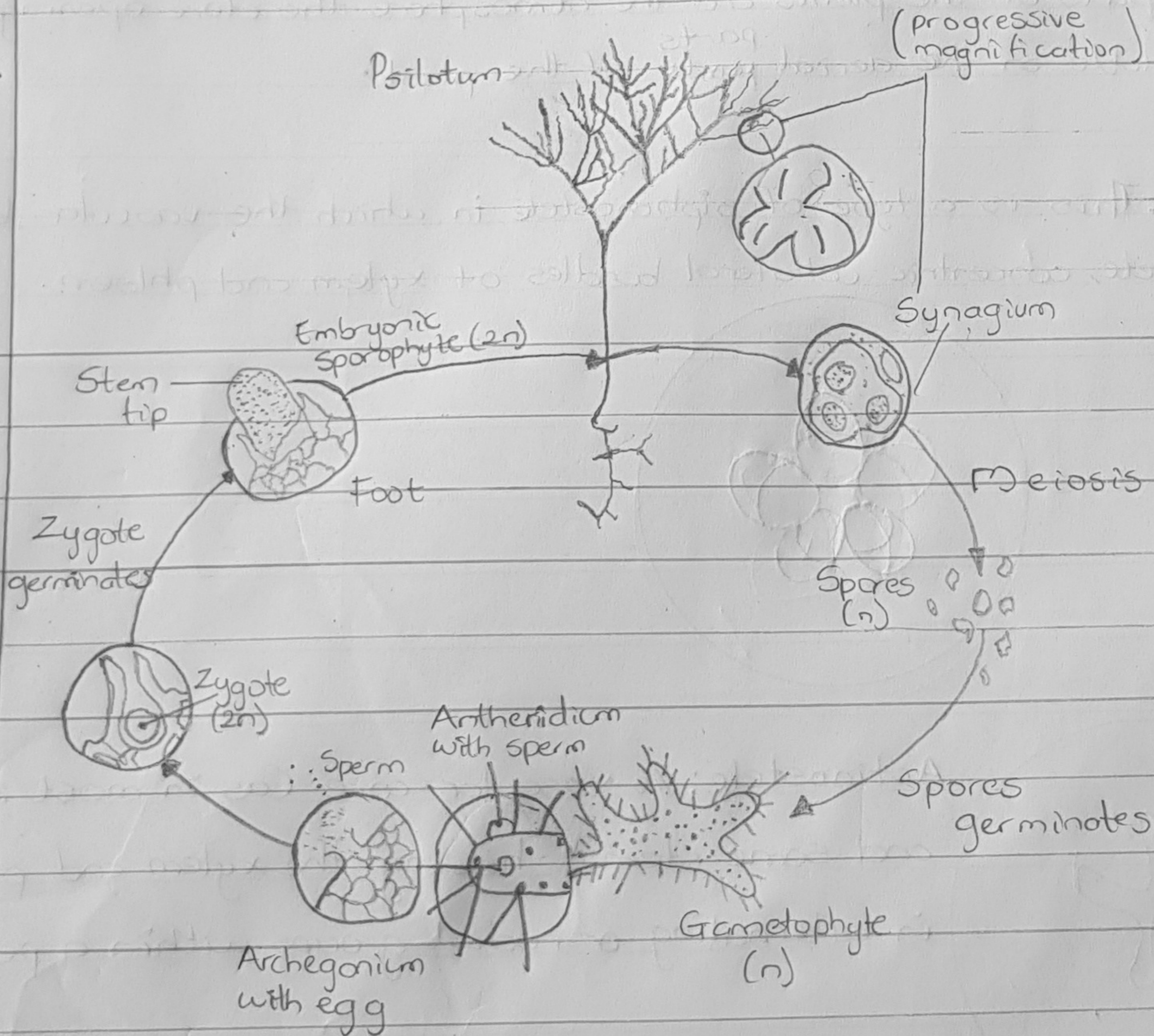


Siphonostele: In more advanced vascular systems, e.g. stems of ferns and higher vascular plants, the stele is a cylinder enclosing a parenchymatous pith. It is a stele consisting of a core pith surrounded by concentric layers of xylem and phloem.



Dictyostele: In siphonosteles, vascular supply to leaves is associated with leaf gaps and the conducting cylinder is a dissected one.

6.



LIFE CYCLE OF A PRIMITIVE VASCULAR PLANT (PSILOTUM)