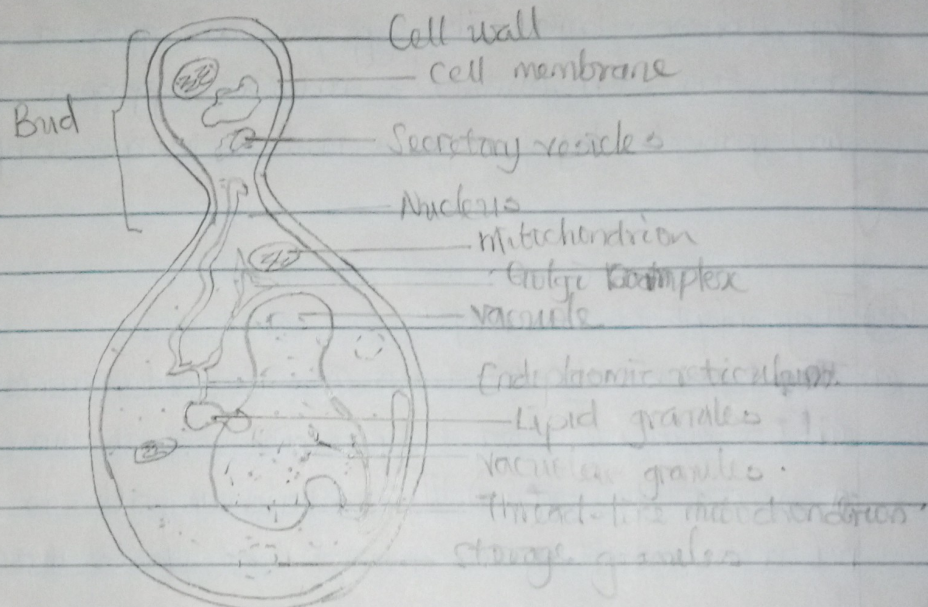


- a) Fungi are very important to the entire terrestrial ecosystem in material cycling and to man.
- b) Fungi are important in the decomposition of organic matter.
- c) Fungi are important in the food industry.
- d) Mushrooms are ~~eating~~ eaten by many human society.
- e) Some fungi produce important antibiotics.
- f) Some fungi are parasite to some horrible pest.



BREWING YEAST (*S. cerevisiae*)

The Brewer's yeast is one of the best known examples of unicell in forms in fungi (bread yeast). The cell structure is very simple. It possess structures: mitochondria, nucleus, endoplasmic reticulum, storage granules, golgi complex, cell wall, cell membrane, e-t.c. The cell exist in diploid or haploid states. They multiply rapidly by simple mitotic cell division - budding.

Sexual reproduction in a filamentous fungi

In sexual reproduction, resistant spherical spores are formed, called Zygospores. They are composed of two suspensor cells, which are the

former gametangia or hyphae. The positive and negative thalli come in contact with each other. Conjugation occurs between the positive and negative thalli by the means of outgrowth developed in the thalli. The septum develops between the PROGAMETANGIA and PLASMOGAMY occurs ~~that~~ that results in the formation of "COENOGAMETES". KARYOGAMY occurs by which the gametes of both the (+) and (-) thallus fuse with each other to form ZYGOTE. The zygote undergoes the maturation phase and surrounded by a thick-walled structure called "ZYGOSPORE" which covers by an outer layer and inner layer. The zygospore undergoes a resting phase for some time. On favourable conditions, zygospore forms germ tube and germinate by forming a new vegetative body.

4) They adapt in two ways:

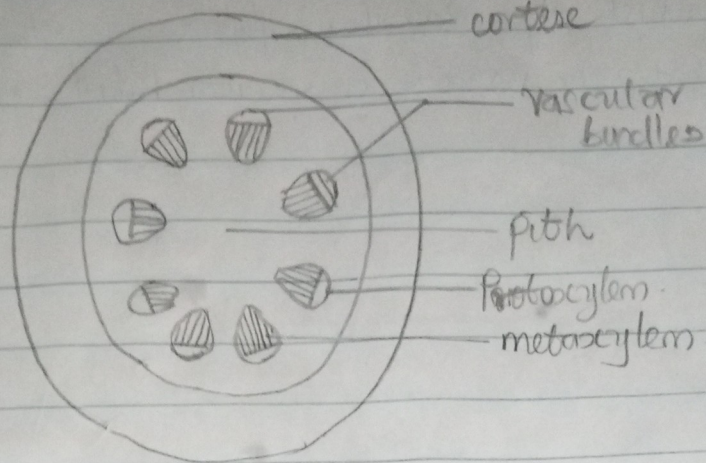
(a) They have definite structures for water and nutrients absorption from soil; therefore, the plant body is divided into two (an aerial part and a subterranean portion). The subterranean portion is the rhizoid and not a true root as the case of land plants that are advanced.

(b) The aerial portion being exposed to the atmosphere demands modifications that prevents excessive loss of water through the surface (i.e. desiccation) and some other modification that permits elimination of excess water from the plant body and not only exchange of gases between the internal parts of the plant and atmosphere, therefore, openings are available on the aerial part of plants.

(5) EUSTELES

A stele typical of dicotyledonous plants that consists of vascular bundles of xylem and phloem strands with the parenchymal

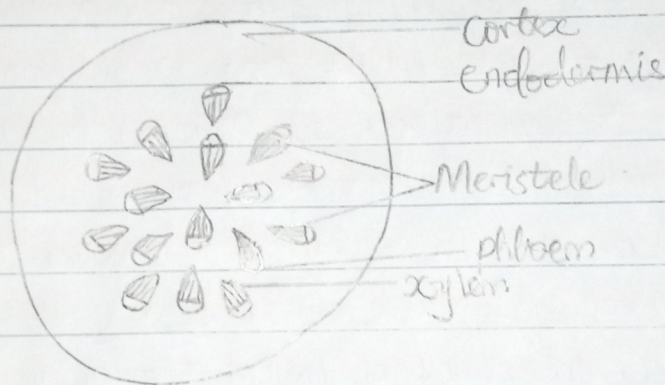
between the bundles



EUSTELE OF A DICOTYLEDONOUS PLANT.

(b) Atactostele

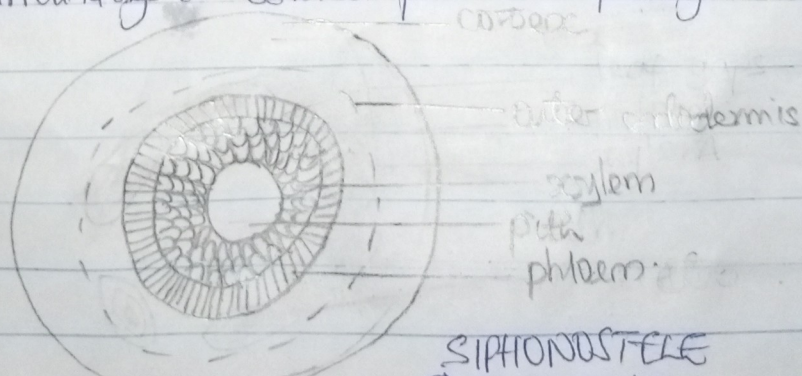
A type of eustele found in monocots in which the vascular tissue in the stem exists as scattered bundles.



ATACTOSTELE OF A MONOCOTYLEDONOUS PLANT.

(c) SIPHONOSTELE

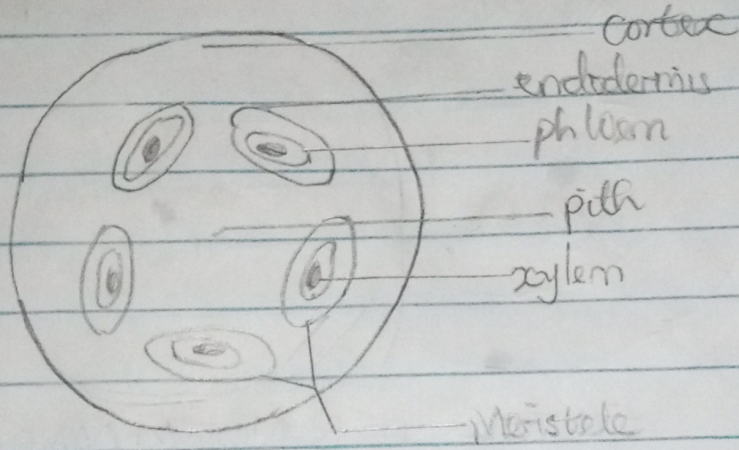
A type of stele in which the vascular tissue in the stem of a cylinder surrounding a central pith and ~~passing~~ ^{possessing} leaf gaps



SIPHONOSTELE

~~DICTYOTE~~ DICTYOSTELE.

A stele in which the vascular cylinder is broken up into a longitudinal series or network of vascular ~~strands~~^{strands} around a central pith.



DICTYOSTELE

⑥ The Life Cycle of a Primitive Vascular Plant.

The life cycle of a pteridophyte is a continuous reproductive process that is dominated by the sporophyte (asexual) stage of the alternation of generation. Fern spores are catapulted into the air and the spores develop into heart shaped haploid gametophytes that contain both male and female sex organs. As the young gametophyte matures, the sex organs become active. In ferns, the male reproductive organ is the ANTHIDIUM, which produces and releases the sperm. The female reproductive organ is the ARCHEGONIUM, at the base of which lies the eggs. Fern reproduction requires water for the sperm to swim to the ARCHEGONIUM and fertilize the egg. The presence of water is essential for maintaining genetically healthy sporophytes.

A fertilized egg or ZYGOTE, grows through the process of MITOSIS producing roots, stems and a new SPOROPHYTE. Embryonic sporophyte are initially tightly curled structures called FURCILIANS that uncurl as they grow into fronds (leaf-like structures). The mature fronds is the SPOROPHYTE, which contains multiple clusters of sporangia, sacs that hold asexual spores. Spores formed by MEIOSIS and are released into the air, and the cycle continues.

