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MATRIC NUMBER: 19/MHS02/021

DEPARTMENT: NURSING

COURSE: BIO 102

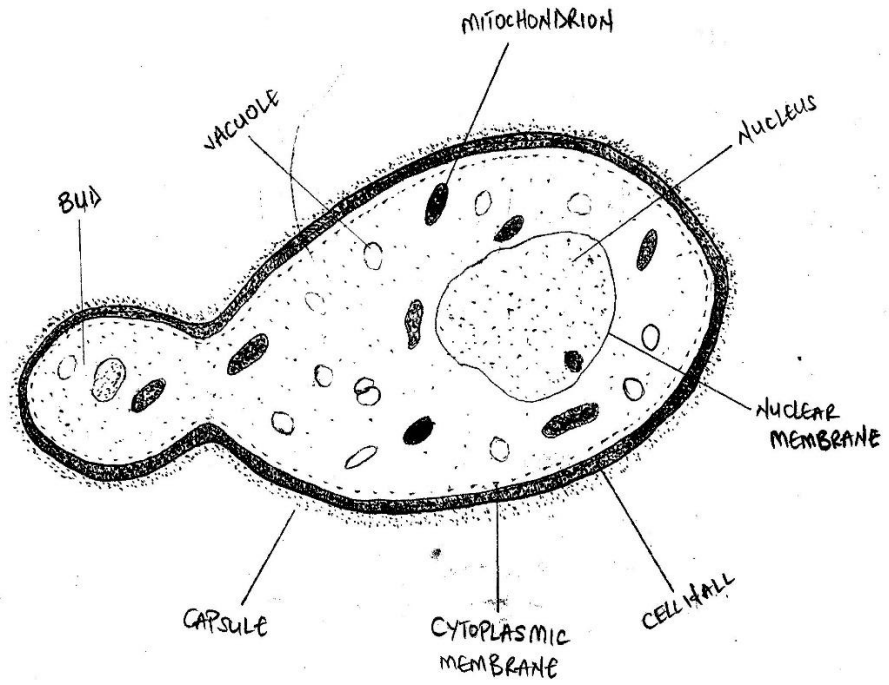
## ASSIGNMENT

Q1. How are fungi important to mankind?

Fungi are responsible for the mediation of decay of organic matter. Without fungi and other microbes, the surface of the earth would have been clogged up with dead matters instead of returning into various cycles. Fungi e.g. yeast (*Saccharomyces cerevisiae*) are important in food industry. Many fungi species mediate the spoilage of wood, food, clothes and paper. Some fungi are parasites to some certain horrible obnoxious (offensive) pests e.g. houseflies, grasshoppers and therefore constitute important biological control agents in regard to such pests.

Q2. Illustrate the cell structure of a unicellular fungus with a well labelled diagram.

Brewer's yeast is one of the best known i.e. of unicellular forms in fungi (Bread yeast, *Saccharomyces cerevisiae*, (bakers' yeast) -causes bread to rise by releasing CO<sub>2</sub> which gets trapped in the dough). 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 structure. Yeast cells are found on exposed sugary fluids e.g. palm wine and sugary fruits where fermentation processes are mediated.



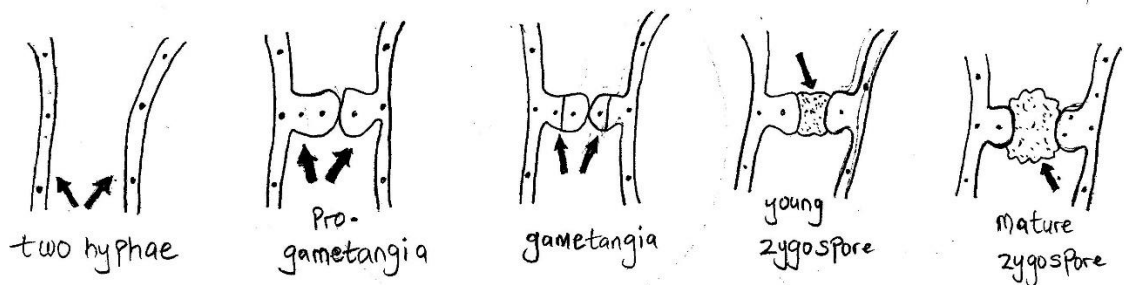
THE STRUCTURE OF A UNICELLULAR FUNGUS → SACCHAROMYCES CEREVISIAE (YEAST)

Q3. Outline the sexual reproduction in a typical filamentous form of fungi.

### **Rhizopus stolonifer**

Sexual reproduction: It occurs when two mating types of hyphae grow in the same medium. Chemical interaction in the two mating types of hyphae induces 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 zygotes fuse in twos and undergo meiosis independently. The zygote germinates under favorable conditions to produce a fruiting which at maturing liberates the haploid spores.



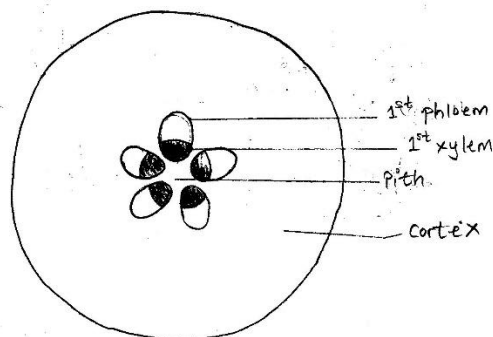
Sexual reproduction in Rhizopus stolonifer

Q4. How do Bryophytes adapt to their environment?

- 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.
- The aerial portion being exposed to the atmosphere demands some modifications that prevents excessive loss of water through the body surface (i.e. desiccation)
- Some other modifications that permit elimination of excess water from the plant body and not only exchange of gasses between the internal parts of the plant and the atmosphere therefore openings are available on the aerial parts of the plant.

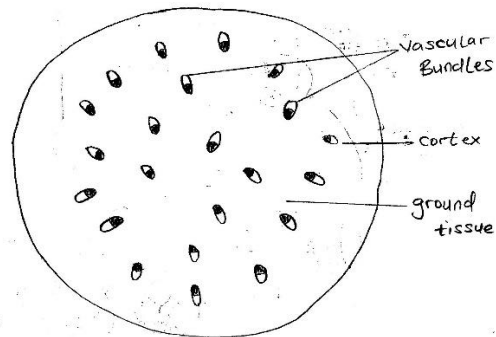
Q5. Describe with illustration the following terminologies: (a) eusteles (b) atactostele (c) siphonostele (d) dictyostele.

- Eusteles: The vascular bundles are discrete, concentric collateral bundles of xylem and phloem.



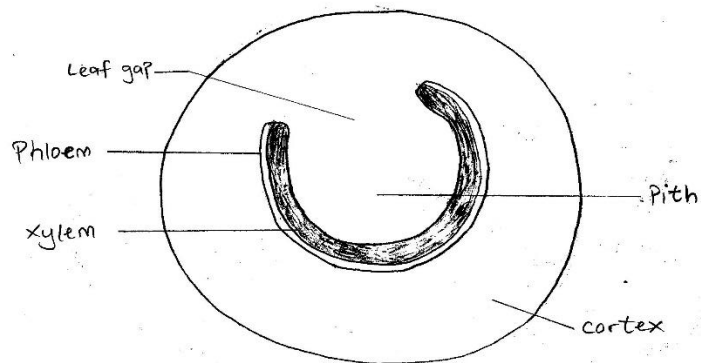
EUSTELE

- Atactostele: In grasses and many monocotyledonous plants the vascular bundles are scattered.



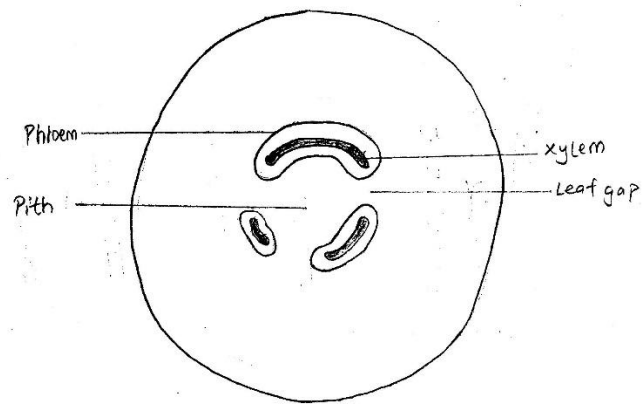
ATACTOSTELE

- Siphonostele: In more advanced vascular systems e.g. stems of ferns and higher vascular plants, the stele is a cylinder enclosing a parenchymatous pith.



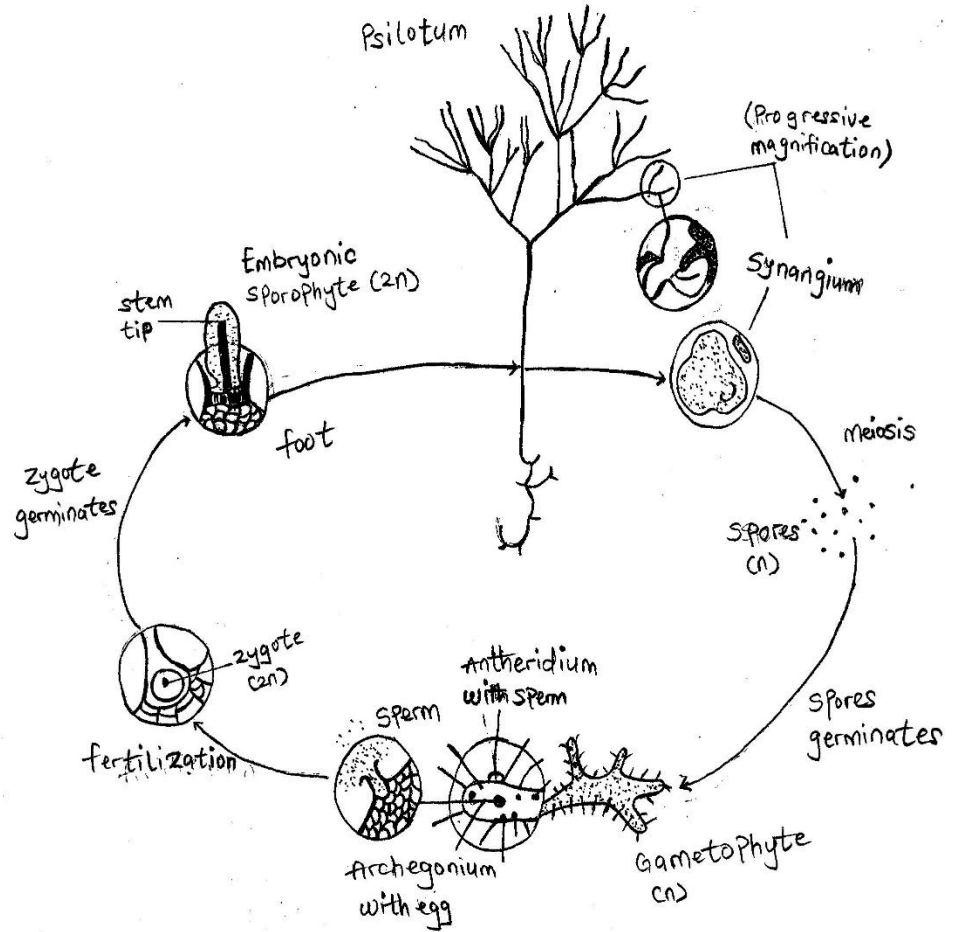
SIPHONOSTELE

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



Dictyostele

Q6. Illustrate the life cycle of a primitive vascular plant.



Life cycle of Psilotum