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1. How are fungi's important to mankind?

Ans: Fungi's are members of the plant kingdom that do not have chlorophyll therefore do not undergo photosynthesis. They are saprophytic, i.e. obtain nutrients largely by breaking down dead organisms by means of enzymes they produce.

Without fungi and other microbes, the surface of the earth would have been clogged up with dead matters with all the various elements locked up in them instead of returning into various cycles.

Fungi like yeast are important in food industry.

Mushrooms can be eaten.

Some fungi are parasites to some pests e.g houseflies, grasshoppers and therefore constitute important biological control agents in regard to such pests.

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

Ans: Sexual Reproduction in *Rhizopus stolonifer* occurs when two mating types of hyphae grow in the same medium. Chemical interaction in the two ~~spring~~ 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. The nuclei in the zygotes fuse in twos and undergo meiosis independently. The zygote germinates under favourable conditions to produce a fruiting which at maturity liberates the haploid spores.

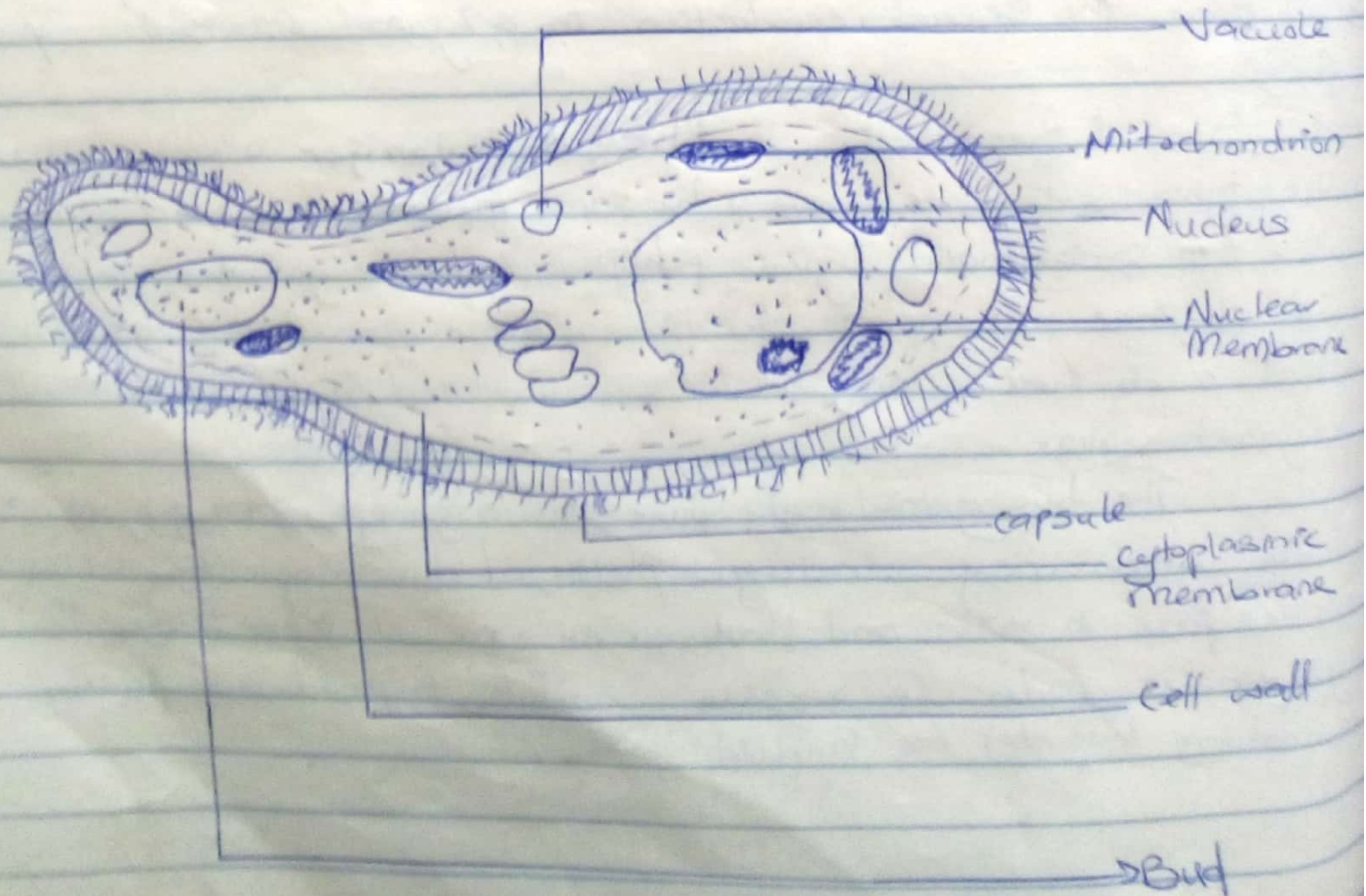
Q How do Bryophytes adapt to their environment?

Ans: **Bryophytes** are a group of non-vascular land plants occupying the amphibious zone (where water and land meets). They constitute the division Bryophyta.

Bryophytes adapt to their environment in the following ways:

- (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)
- (ii) The aerial portion being exposed to the atmosphere demands some modification that prevents excessive loss of water through the body surface.
- (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 ~~body~~^{plant} and the atmosphere therefore openings are available on the aerial parts of the plant.

Q

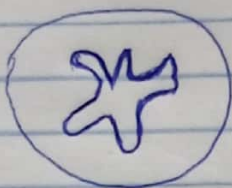


⑤ Describe with illustrations the following terminologies

① eusteles - This is when the vascular bundles of a plant are discrete, concentric collateral bundles of xylem and phloem. It is also a type of siphonostele

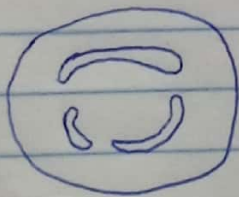


② Atactostele - This is when the vascular bundles of a plant are scattered. It is a type of protostele



③ Siphonostele - This is a type of organisation where the stele is a cylinder enclosing a parenchymatous pith. It can be differentiated into solenostele, dictyostele, eusteles

④ Dictyostele - This is when the conducting cylinder is dissected one.



⑥ Illustrate the life cycle of a primitive vascular plant

