

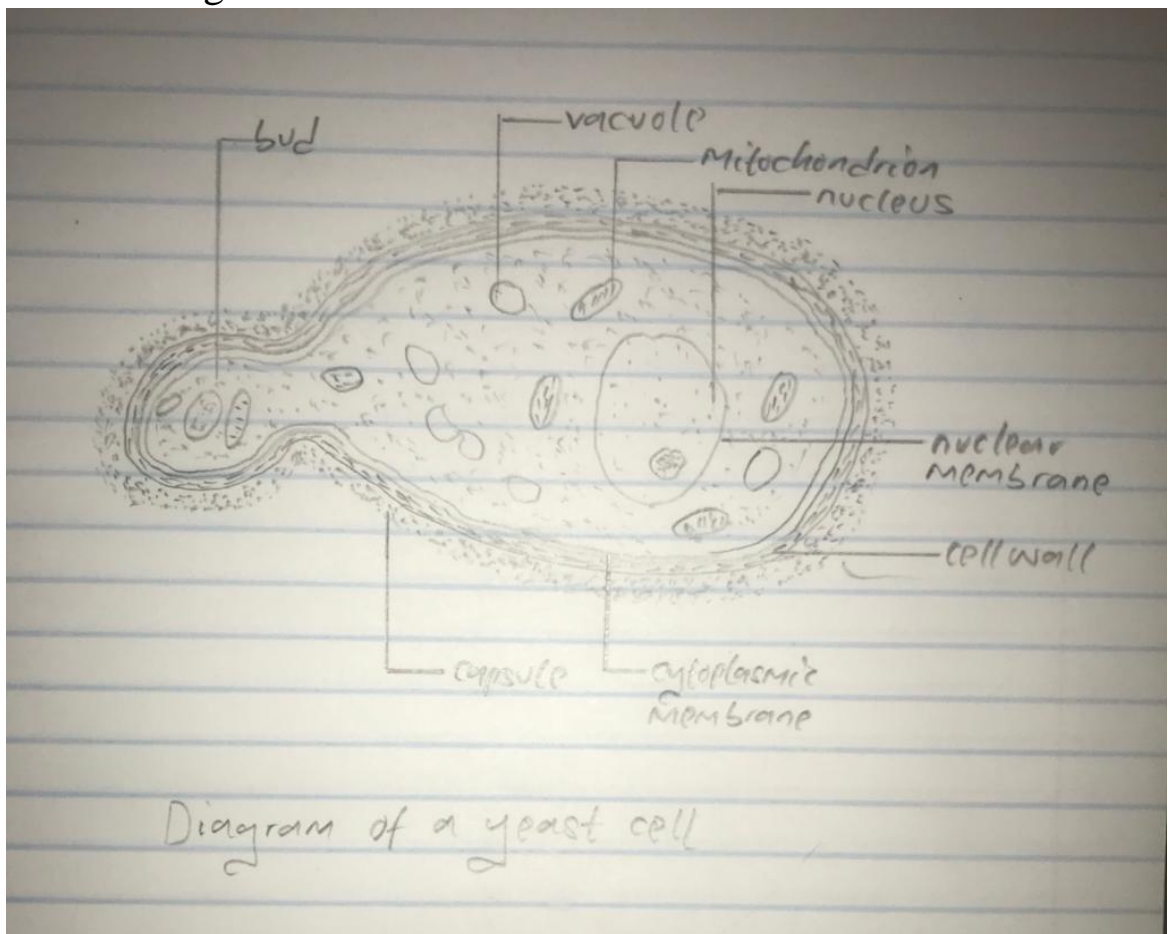
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DEPT: MEDICINE AND SURGERY
MATRIC NUMBER: 19/MHS01/177

BIO102 ASSIGNMENT

1. How are fungi important to mankind?

- i. Fungi are responsible for the decay of organic matter.
- ii. Fungi are important in the food industry; for example, yeast: which is used in the production of various food such as yoghurt and cheese and in the production of alcohol. Some species of fungi such as mushrooms can also be eaten for food by man.
- iii. Fungi is also used in the production of important antibiotics such as penicillium, used in the treatment of various bacterial diseases.
- iv. Some fungi are parasites to certain pests and therefore serve as biological control agents for those pests.

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



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

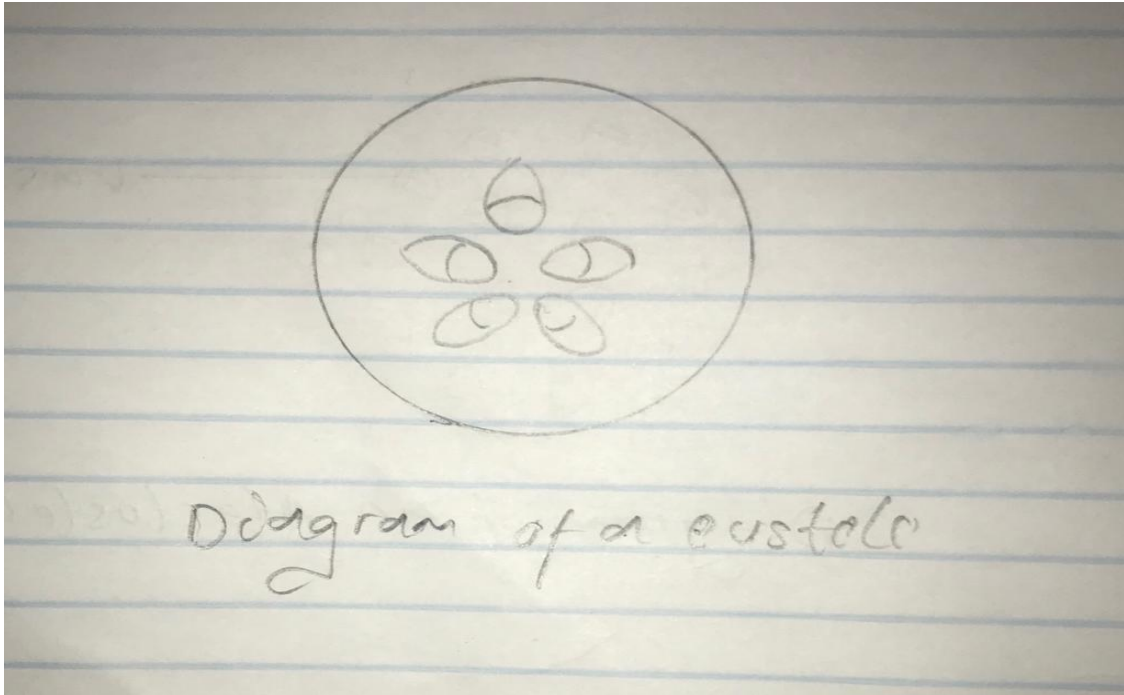
In *Rhizopus stolonifera* sexual reproduction occurs when two mating types of hyphae grow in the same medium. Chemical interaction in these hyphae induces growth perpendicular to the hyphae in the opposite directions. These growth result in the gametangium which is a wall like structure containing many isolated nuclei. The two gametangia fuse to form a zygote which may then undergo a prolonged resting stage. The nuclei in the zygotes fuse in twos and undergo meiosis independently. The zygote germinates under favorable conditions and produces a fruiting which liberates the haploid spores when mature.

4. How do bryophytes adapt to their environment?

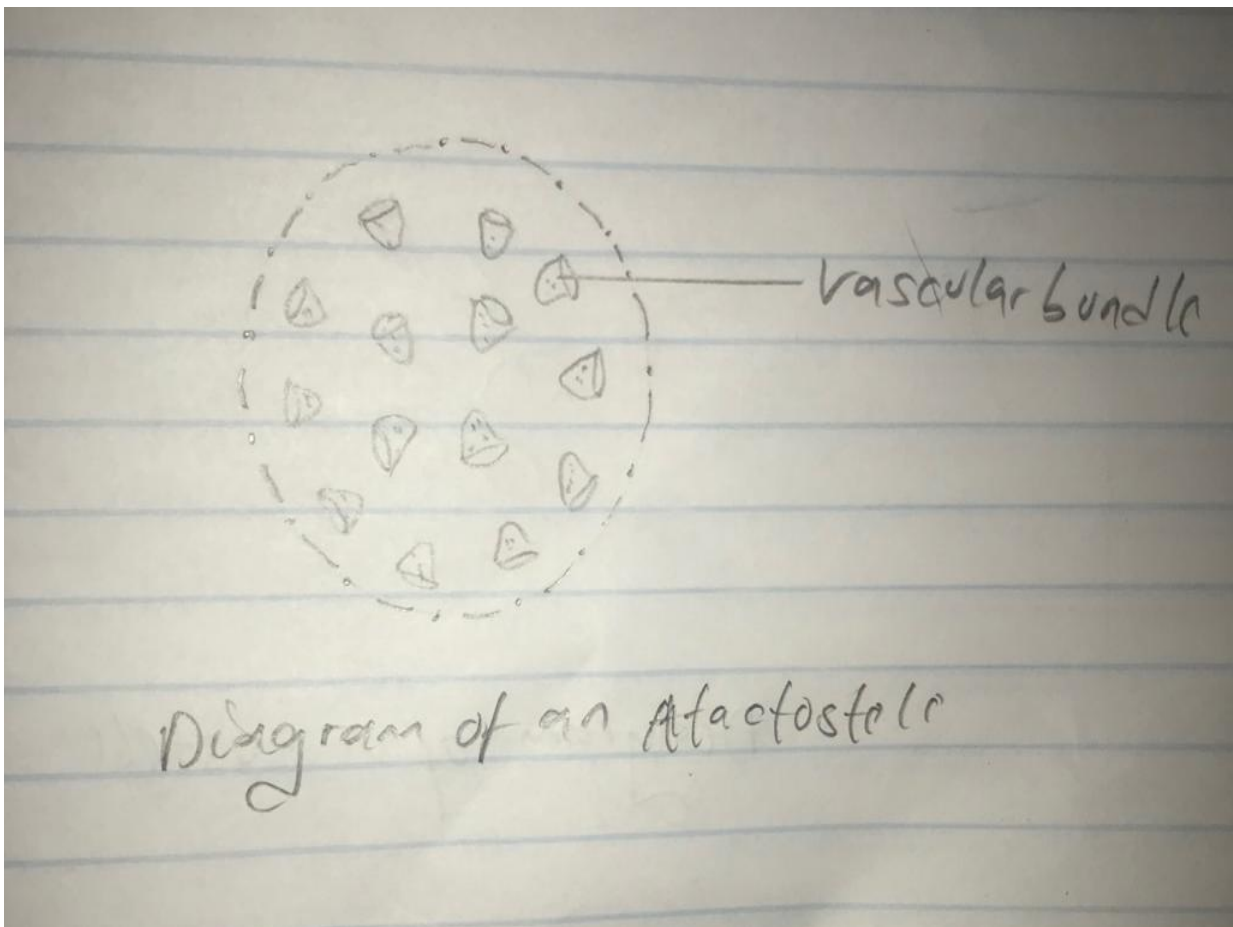
- i. They have definite structure for water and nutrient absorption from the soil. The bryophyte's body is divided into an aerial portion and a subterranean portion which consists of a rhizoid; however the rhizoid is not a true root.
- ii. The aerial portion of the bryophyte which is exposed to the atmosphere has some modifications that prevent the excessive loss of water through the body surface.
- iii. The bryophyte body also has some modifications which allow the removal of excess water from and not only exchange of gases between the internal parts of the atmosphere. These openings are found on the aerial portion of the plant.

5. Illustrate with diagrams the following terminologies.

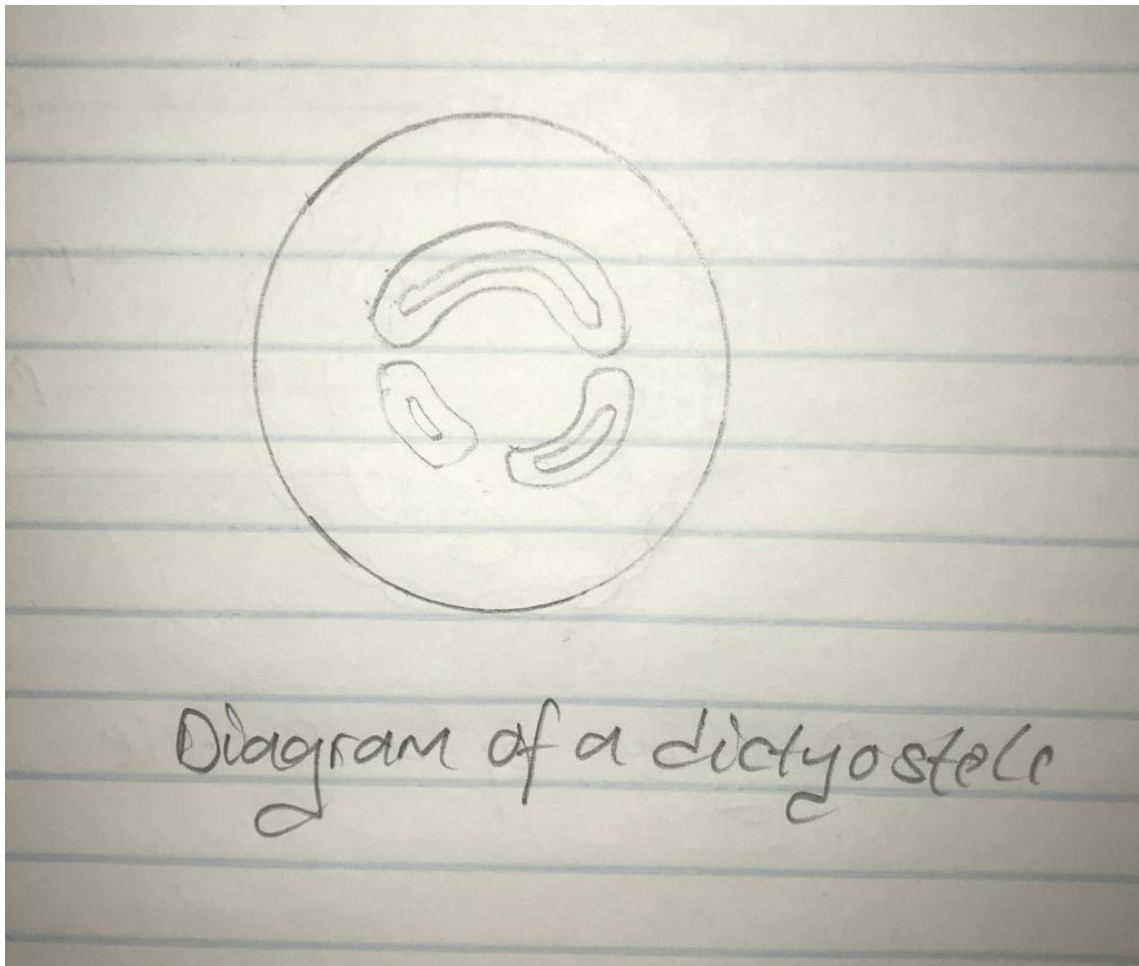
- a. Eusteles: A eustele is a "derived siphonostele" usually found in dicotyledonous plants but can also be found in the roots of monocot flowering plants. It consists of vascular bundles of xylem and phloem strands with parenchymal cells between the bundles. The vascular bundles in a eustele can be collateral (with the phloem on only one side of the xylem or bicollateral (with phloem on both sides of the xylem).



- b. Atactosteles: An atactostele is a type of eustele found in monocots, in which the vascular tissue in the stem exists as scattered bundles.



- c. Siphonostele: A siphonostele is a type of stele consisting of vascular tissue surrounding a central core of pith parenchyma. Siphonosteles can be ectophloic (phloem present only external to the xylem) or amphiphloic (with phloem both external and internal to the xylem). There are two types of siphonosteles namely: solenostele and dictyostele.
- d. Dictyostele: A dictyostele is a type of siphonostele in which the vascular tissue in the stem forms a central cylinder around the pith but with closely spaced leaf gaps.



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

