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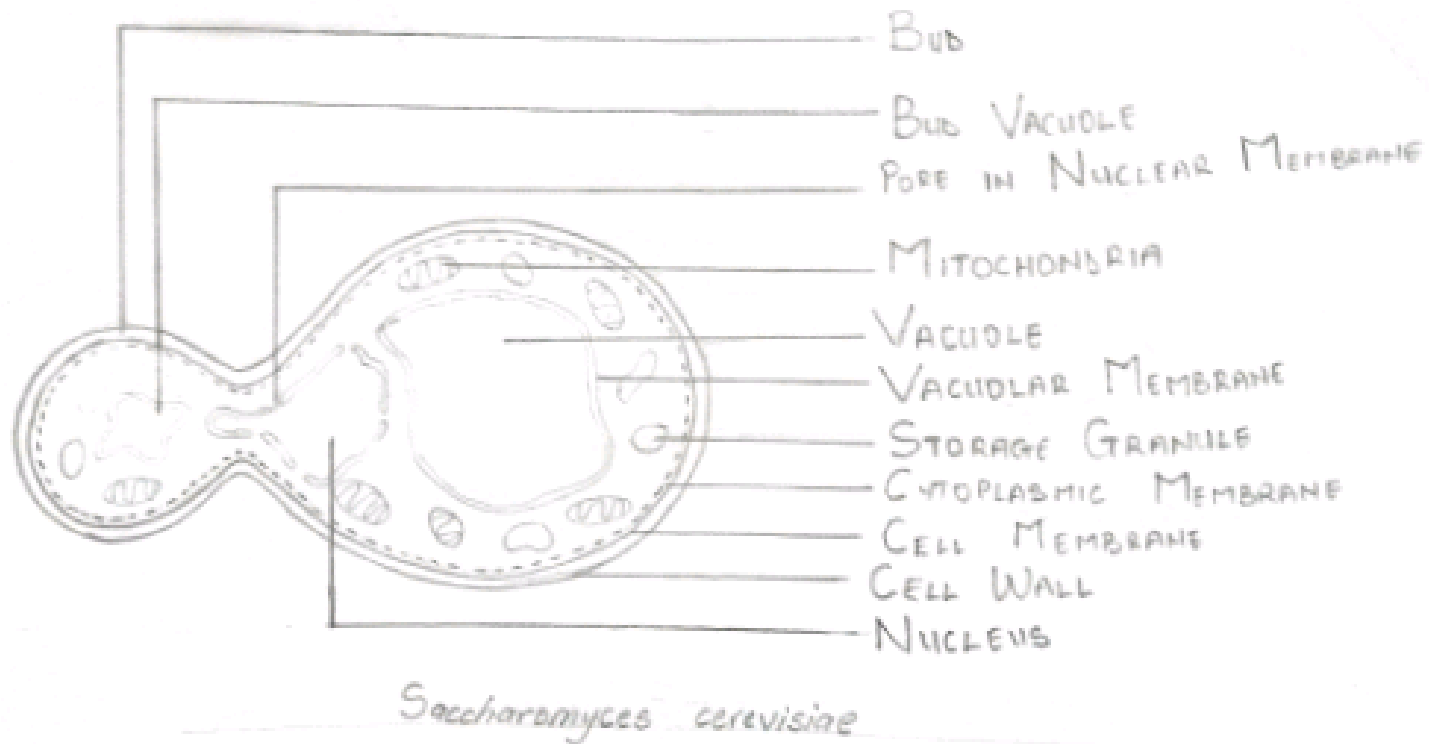
Matric No: 19/MHS01/426

Course code: Bio102

1. How are fungi of importance to mankind.

- 1. They're important to the entire terrestrial ecosystem in material cycling and to man.
- 2. Fungi are responsible for the mediation of dead organic matter.
- 3. 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 to into various cycles.
- 4. Fungi e.g yeast are important in the food industry.
- 5. Many fungi species mediate the spoilage of wood , food, clothes and paper.
- 6. Mushrooms are eaten by many human societies, therefore serving as a source of food.

2. Below is the cell structure of a unicellular fungus (Yeast – *Saccharomyces cerevisiae*):



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

- **SEXUAL REPRODUCTION IN RHIZOPUS STOLONIFER**

Sexual reproduction occurs when two mating types of hyphae grow in the same medium. Chemical interaction in the two mating types of hyphae induces growth 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 GAMENTANGIUM. 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 favourable conditions to produce a fruiting which at maturity liberates the haploid spores.

4. How do bryophytes adapt to their environment

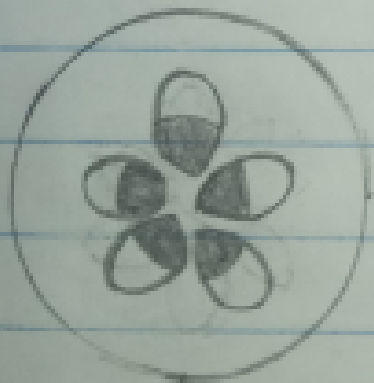
- 1. They have definite structures for water and nutrient absorption from the soil; therefore the plant body is divided into two(an aerial portion and a subterranean portion).
- 2. The aerial portion being exposed to the atmosphere demands some modifications that prevents excessive loss of water through the body surface I.e dessication
- 3. Other modifications like openings available in the aerial parts of the plant 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 .
- 4. They have a waxy cuticle that prevents the body, the zygote and the embryo from drying out.
- 5. Spores are dispersed by wind.
- 6. They have air pores for the absorption of carbon dioxide from the atmosphere for photosynthesis.

5. Describe with illustration the following terminologies.

- A. **Eusteles**; a type of stele in which the vascular tissue in the stem forms a central ring of bundles around a pith. The vascular bundles are discrete, concentric collateral bundles of xylem and phloem.
- B. **Atactostele**; a type of stele found in grasses and monocots, in which the vascular tissue in the stem exists as scattered bundles.
- C. **Siphonostele**: Stele is a cylinder enclosing a parenchymatous pith it is found in more advanced vascular systems e.g stems of ferns and higher vascular plants.
- D. **Dictyostele**: This is a type of siphonostele in which the vascular supply to leaves is associated with leaf gaps and the conducting cylinder is a dissected one.

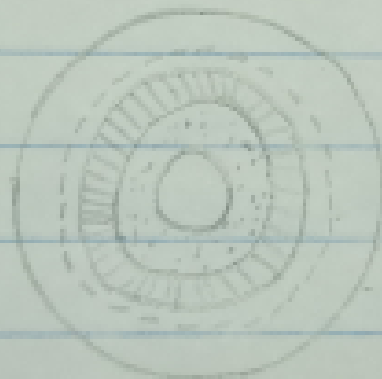
Diagrammatic illustration of eustele, atactostele, siphonostele and diactyostele.

EUSTELE



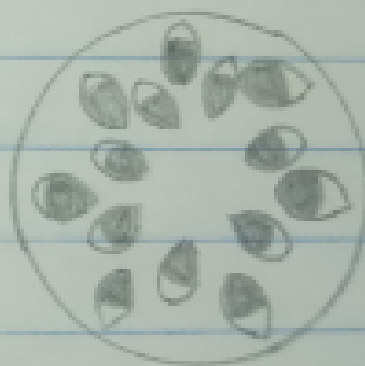
ECTOPHLOIC SIPHONOSTELE

~~Diagram of Ectophloic Siphonostele~~

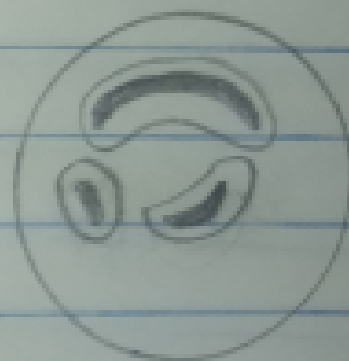


ATACTOSTELE

~~Diagram of Atactostele~~



DICTYOSTELE



6) Illustrate the life cycle of a primitive vascular plant.
 Lifecycle of primitive vascular plant (Psilotoxum)

