

BIO 102

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DEPT: MEDICINE AND SURGERY

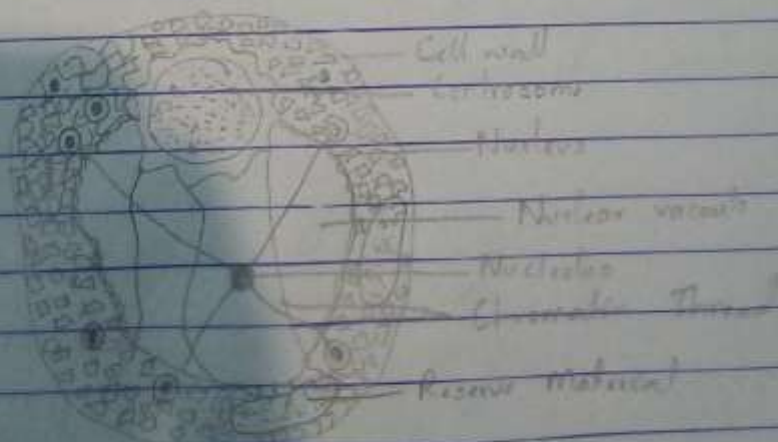
MATRIC NO: 19/MHSD/181

1 IMPORTANCE OF FUNGI TO HUMANS

- They are important decomposers in most ecosystems.
- Mycorrhizal fungi are essential for the growth of most plants.
- Fungi, as food, play a role in nutrition.
- Act as agents of fermentation in production of bread, cheese.

2 Illustrate cell structure of unicellular fungus with labelled diagram

The structure of yeast cell has been very thoroughly worked out by a large number of investigators who differ in their interpretations. Each yeast cell has a distinct cell wall enclosing granular cytoplasm, within which can be seen a large vacuole and a nucleus which varies in size. It may become contracted but does not disappear completely except during spore formation. The cell wall is thin and delicate. Reserve materials are present in the cytoplasm.



A WELL LABOURED DIAGRAM OF YEAST CELL

2 Outline sexual reproduction in a typical filamentous form of fungus.
The sexual reproduction in fungi consists of three sequential stages:

- Plasmogamy
- Karyogamy
- Meiosis

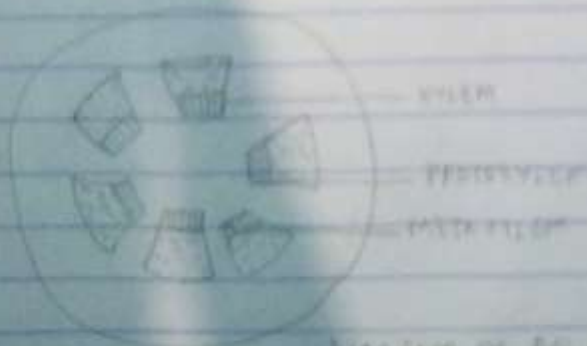
This involves mating between two haploid hyphae, during mating, two haploid parent cells fuse forming a diploid zygote called a zygospore.

4 How do Bryophytes adapt to their environment?
Two adaptations made the move from water to land possible for Bryophytes: →

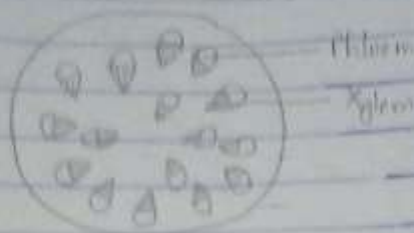
- Waxy cuticle: This helps protect the plants from drying out.
- Gametangia: This provided further protection against drying out specifically for the plants gametes.

5 Describe the following with illustrations.

a. Eustele: In the arrangement below, the primary vascular tissue consists of vascular bundles usually in one or two rings around the pith. In addition to being found in stems, the eustele appears in the roots of almost flowering plants.



- b) Atractostele: A type of eustele found in monocots in which the vascular tissue in the stem exist in scattered bundles.



A DIAGRAM OF AN ATRACTOSTELE

- c) Siphonostele: They have a region of ground tissue called the pith internal to xylem. The vascular strand comprises a cylinder surrounding the pith. They often have interruptions in the vascular strand where leaves originate (called leaf gaps).
- d) Dictyostele: If multiple gaps in the vascular cylinder exist in any one transverse section. The numerous leaf gaps and leaf traces give a dictyostele the appearance of many isolated islands of xylem surrounded by phloem. Each of the apparently isolated units of a dictyostele can be called a meristele. This type of stele is only found in stems of ferns.

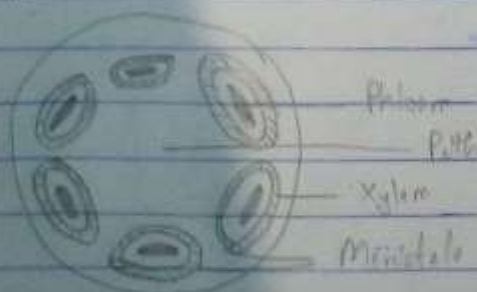


DIAGRAM OF A DICTYOSTELE

6 illustrate the life cycle of a primitive vascular plant
The life cycle of a primitive vascular plant (Pteridophytes - ferns) is split between free-living gametophytes and sporophytes phases. The gametophyte is generally simple in structure, containing egg-producing archegonium and sperm-producing antheridium.