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Dept: MBB5  
Course: BSc 102

### Fungi & Assignment

- \* They are important to mankind because:
  - \* They are part of the nutrient cycle in ecosystem
  - \* They help to control the population of damaging pests.
  - \* Some are essential for the productivity of farmland.
  - \* Some types of fungi serve as food e.g mushrooms
  - \* They help in fermentation
  - \* Antibiotics are naturally produced by fungi to kill or inhibit the growth of bacteria.

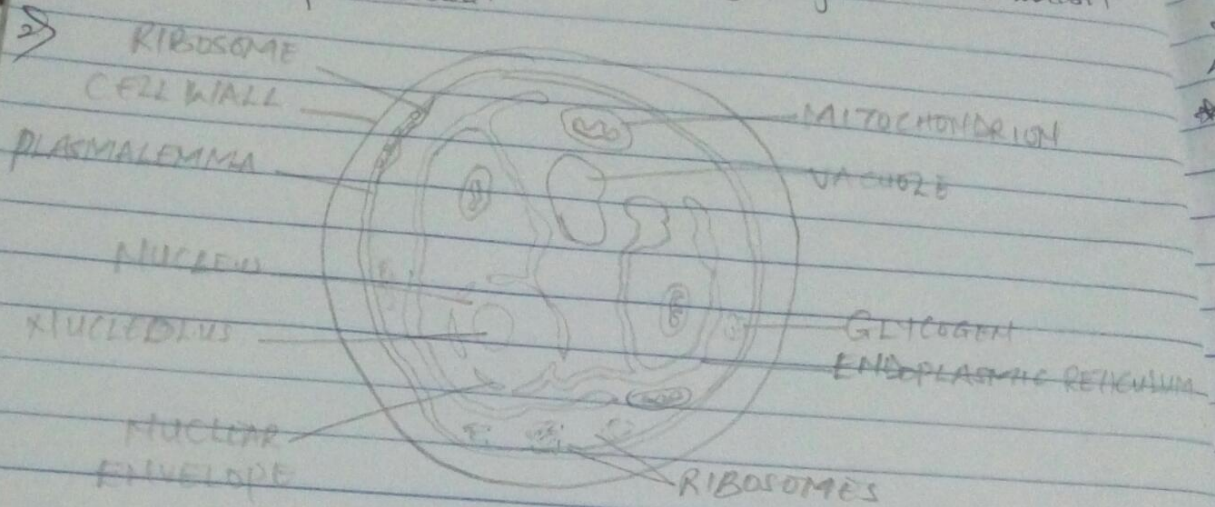


DIAGRAM OF A FUNGUS CELL

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

- \* In fungi, sexual reproduction often occurs in response to adverse environmental conditions.
- \* Two mating types are produced
- \* When both mating types are present in the same mycelium, it is called homothallic, or self fertile
- \* Heterothallic mycelia require two different, but compatible mycelia to reproduce sexually
- Although there are many variations in fungal sexual reproduction, all include the following three stages.

First, during plasmogamy (literally, marriage or union of cytoplasm). Two haploid cells fuse, leading to a dikaryon stage where two haploid nuclei coexist in a single cell.

During karyogamy ("nuclear marriage") the haploid nuclei fuse to form a diploid zygote nucleus.

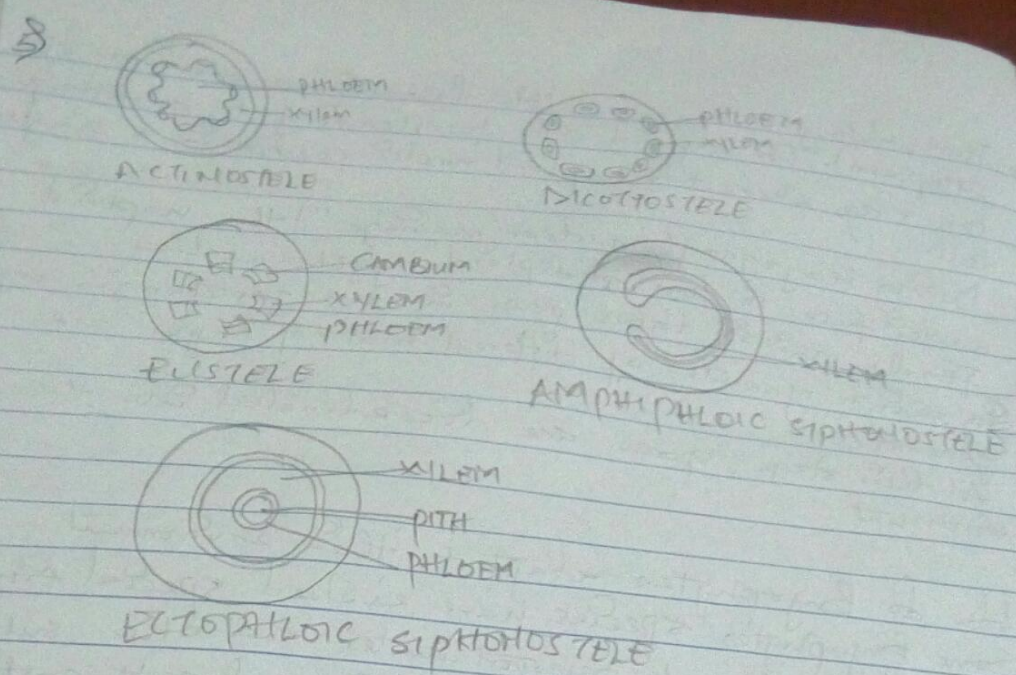
Finally, meiosis takes place in the gametangia organs, in which gametes of different mating types are generated.

At this stage, spores are disseminated into the environment.

2) How do Bryophytes adapt to their environment? Some Bryophytes species have evolved special tissue which allows them to transport water and other substances through their tissue. However, the tissue doesn't contain P<sub>6</sub>, an essential protein found in the vascular tissue.

This specialized tissue is therefore not considered to be vascular tissue although it does a respectable job of performing a similar function. Bryophytes can be found in wet environments all around the world. Because they have no vascular tissue, they aren't able to take water from the soil and transport it to higher tissues.

Two adaptations made the move from water to land possible for Bryophytes: a waxy cuticle and gametangia. The waxy cuticle helped to protect the plant tissue from drying out and the gametangia provided further protection against drying out specifically for the plants gametes. Bryophytes also show embryonic development which is a significant adaptation that links them to the vascular land plants.



8) The illustration of the life cycle of primitive vascular plant

