

Belle Hawaii Gymnasium

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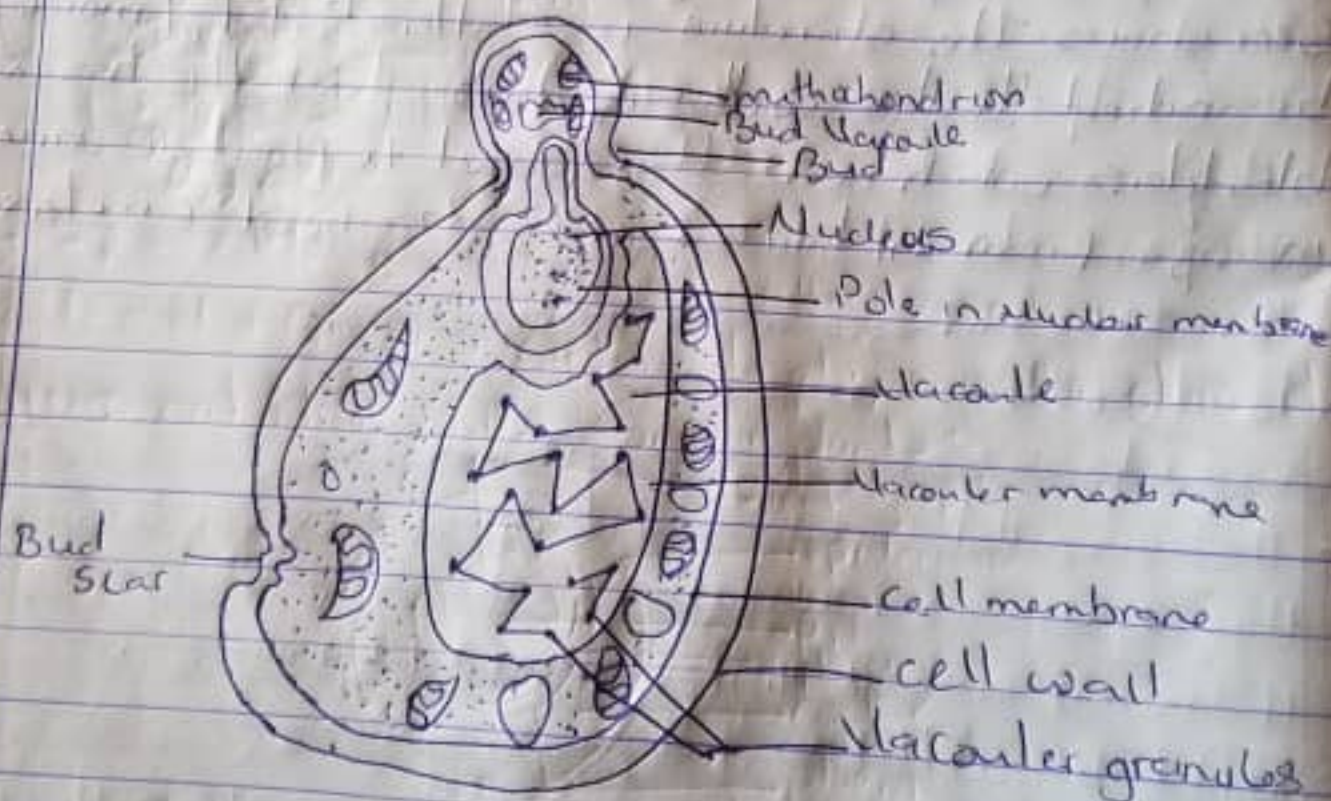
Nursing Science

Bio 102

1 Importance of fungi to man

Fungi are important to everyday human life. They are important decomposers in most ecosystems. Mycorrhizal fungi are essential for the growth of most plants. Fungi, as food, play a role in human nutrition in the form of mushrooms, and are agents of fermentation in the production of bread, cheese, alcoholic beverages, and numerous other food preparations. Secondary metabolites of fungi are used as medicines, such as antibiotics and anticoagulants. Fungi are model organisms for the study of eukaryotic genetics and metabolism.

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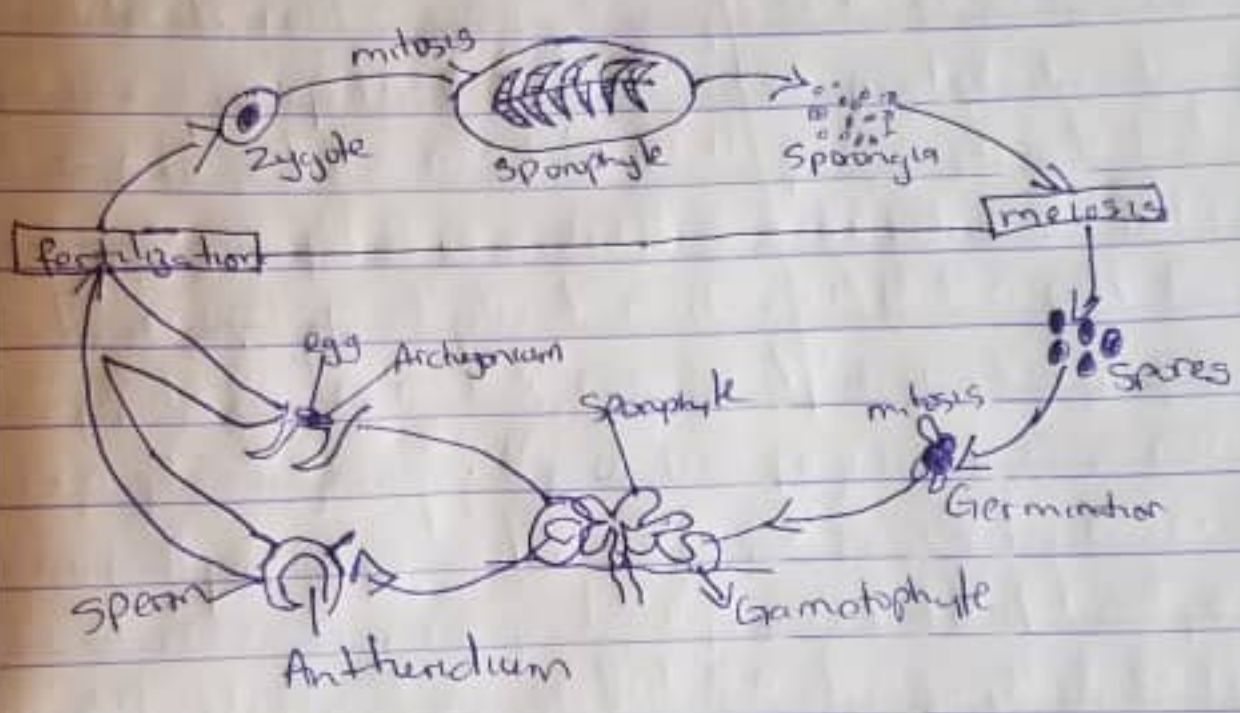


Sectional View of a budding cell

The nuclear membrane remains intact throughout the process, although gaps in its integrity are found. The nucleus of the fungus becomes pinched at its midpoint, and the diploid chromosomes are pulled

6 Life cycle of a primitive vascular plant.
 Life cycle of a fern.

It shows the life alternation of generations with dominant sporophyte stage.



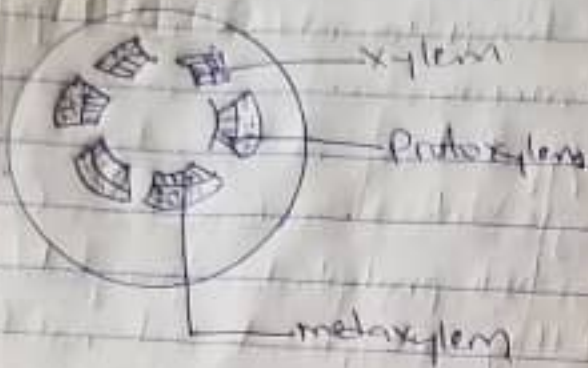
Life cycle of a fern.

- apart by spindle fibres formed within the intact nucleus
- The nucleolus, is usually retained and divided between the daughter cells.
- Sexual reproduction in the fungi consists of 3 stages: Plasmogamy, karyogamy & meiosis.
- The diploid chromosomes are pulled apart into two daughter cells each containing a single set of chromosomes (haploid state)
- Plasmogamy: the fusion of two protoplasts brings together two compatible nuclei and they are present but not fused.
- Karyogamy: fusion of these haploid nuclei and the formation of diploid nuclei. And the cell formed is called Zygote. In more evolved fungi, karyogamy is separated from plasmogamy. Once karyogamy has occurred, meiosis generally follows and restores the haploid phase. The result from meiosis are generally, nonmotile, spores called meiospores. Some of the fungi produce no gametangia at all: the somatic hyphae take over the sexual function and come in contact, fuse and exchange nuclei.

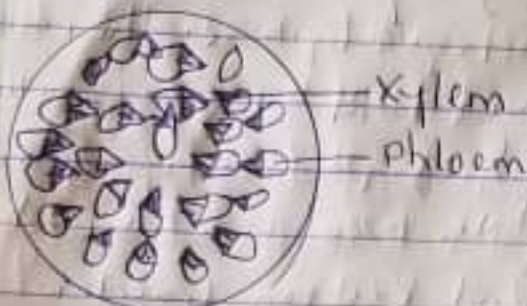
Fungi in which at stages individual bears both male and female gametangia are homothallic fungi. Rarely, gametangia of different sexes are produced by separate individuals, one a male, the other a female. Such species are known as dioecious. Dioecious species usually produce sex organs only in the presence of an individual of the opposite sex.

4 Two adaptations made the move from water to land outside animal gametangia. The waxy cuticle helped to protect the plants tissues from drying out and the gametangia provided further protection against drying out specifically for the plants gametes.

5. **Eustele** is a stele typical of dicotyledonous plants. It consists of discrete bundles of xylem and phloem strands with parenchyma cells between the bundles.



b. **Atactostele** is a type of eustele found in monocots, in which the vascular tissue in the stem exists as scattered bundles.



c. **Siphonostele** is a stele in which the vascular tissue is in the form of a cylinder surrounding the pith, as in the stems of moss ferns and other seedless vascular plants.



d. **Diclyostele**, a stele in which the vascular cylinder is broken up into a longitudinal series or network of vascular strands around a central pith (as in many fern).

