

NAME: ATOME MIMINOD VICTORIA
MATRICULATION NUMBER: 19/MHSC01/107
DEPARTMENT: MEDICINE AND SURGERY
COLLEGE: MEDICINE AND HEALTH SCIENCES

COURSE: BIO 102

ASSIGNMENT

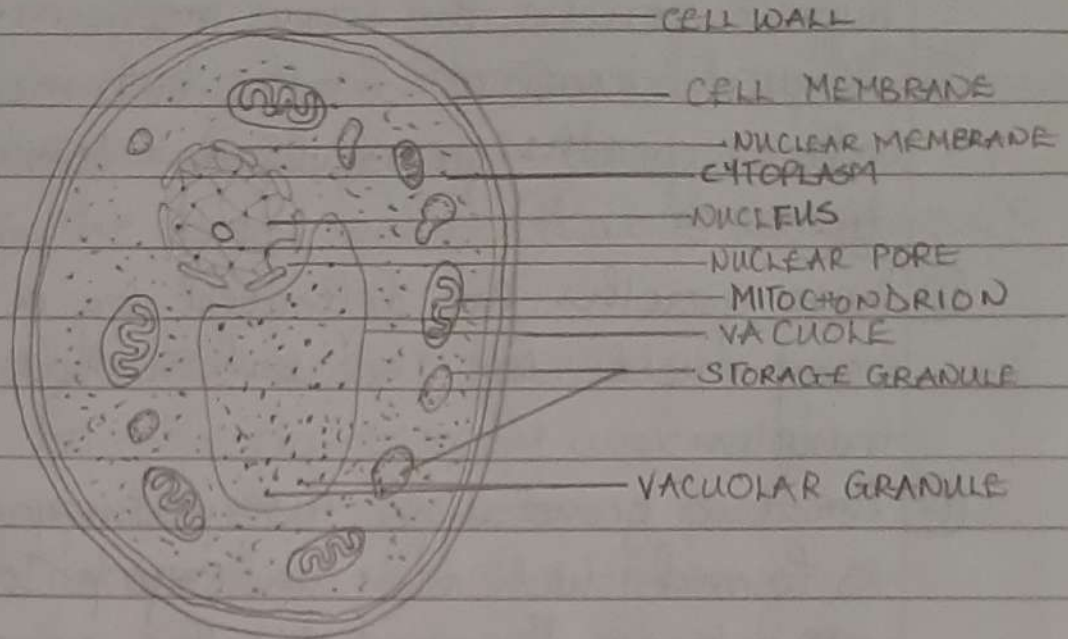
1. Fungi are important to mankind in the following ways:

- (i) Fungi are responsible for the mediation of decay of organic matter.
- (ii) Fungi and other microbes help to return the various elements locked up in dead matters back to the environment through various cycles.
- (iii) Fungi such as yeast are important in the food industry.
- (iv) Mushrooms which are fungi are eaten by many human societies.
- (v) Fungal species such as Penicillium notatum produce important antibiotics.
- (vi) Many fungal species mediate the spoilage of wood, food, clothes and paper.
- (vii) Many fungi are plant pathogens causing blights and smuts in cereal (Helmintosporium maydis and Ustilago zeae).

2. Sexual reproduction in Rhizopus stolonifer (a filamentous fungi):

- (i) Sexual reproduction occurs when two mating types of hyphae grow in the same medium.
- (ii) Chemical interaction in the two mating types of hyphae induces growth perpendicular to the hyphae in opposite directions.

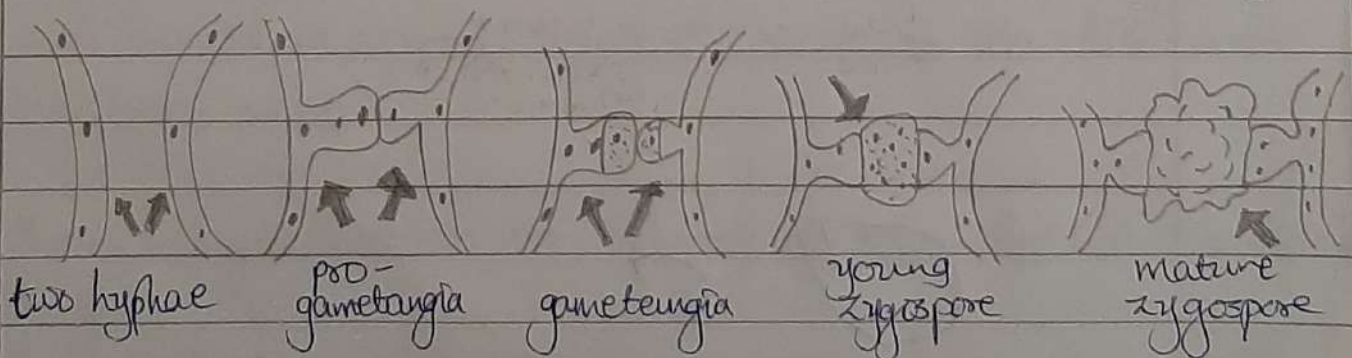
2.



A WELL-LABELED DIAGRAM OF THE CELL STRUCTURE OF A UNICELLULAR FUNGUS (*Saccharomyces cerevisiae*)

3 Sexual reproduction in a typical filamentous fungi such as *Rhizopus stolonifer* includes:

- (i) Sexual reproduction occurs when two mating types of hyphae grow in the same medium.
- (ii) Chemical interaction in the two mating types of hyphae induces growths perpendicular to the hyphae in opposite directions.
- (iii) These growths are delimited by a wall such that many nuclei are isolated in what is called a gametangium.
- (iv) The 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.
- (v) The zygote germinates under favourable conditions to produce a fruiting which at maturity, liberates the haploid spores.



4 Bryophytes adapt to their environment in the following ways:

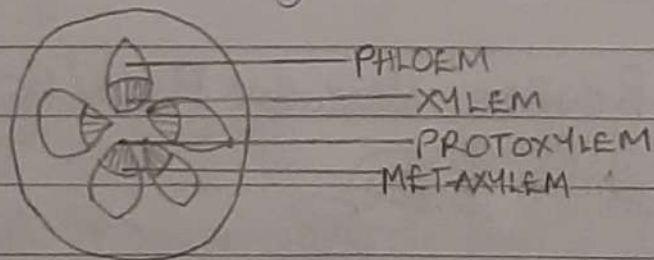
- (i) They have definite structures for water and nutrient absorption from the soil; therefore the plant body is

divided into two (an aerial portion and a subterranean portion). The subterranean portion is the rhizoid and is not a true root as the case of land plants that are advanced.

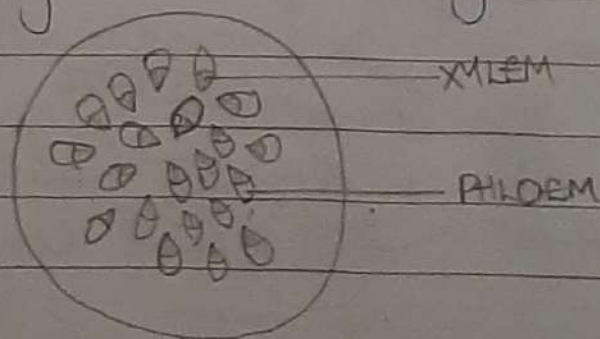
b) The aerial portion being exposed to the atmosphere demand some modifications that prevents excessive loss of water through the body surface (that is, desiccation).

c) Some other modifications that permit elimination of excess water from the plant body and not only exchange of gases between the internal parts of the plant and the atmosphere therefore openings are available on the aerial parts of the plant.

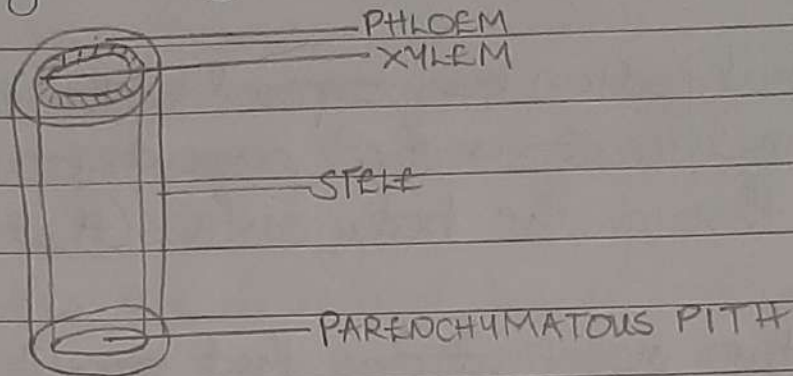
5a Fusteles: Here, the vascular bundles are discrete, concentric collateral bundles of xylem and phloem. Fusteles are found in herbaceous dicotyledonous plants.



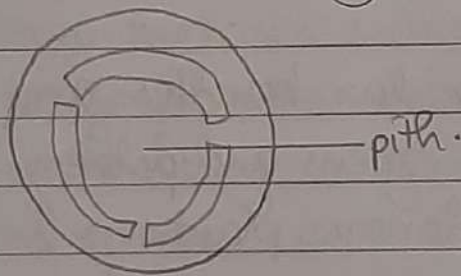
b) Atactostele: Here, the vascular bundles are scattered. This is found in grasses and many monocotyledonous plants.



c **Siphonostele:** Here, the stele is a cylinder enclosing a parenchymatous pith. This is found in more advanced vascular systems e.g stems of ferns and higher vascular plants.



d **Diclystole:** This is a stele in which the vascular cylinder is broken up into a longitudinal series or network of vascular strands around a central pith. This is found in many ferns.



6 **Life Cycle of a Primitive Vascular Plant (Psilotum).** (progressive magnification)

