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Department: M.B.B.S
Matric Number: 19/mhs01/164

1) How are fungi important to mankind?
a Fungi are responsible for the mediation of decay of organic matter.
b Fungi e.g yeast are important in food industry
c Mushrooms are eaten by many human societies.
d Species e.g Penicillium notatum produce important antibiotics
e Some fungi constitute important biological control agents in regard to certain pests.

2) Illustrate the cell structure of a unicellular fungus with a well labeled diagram.

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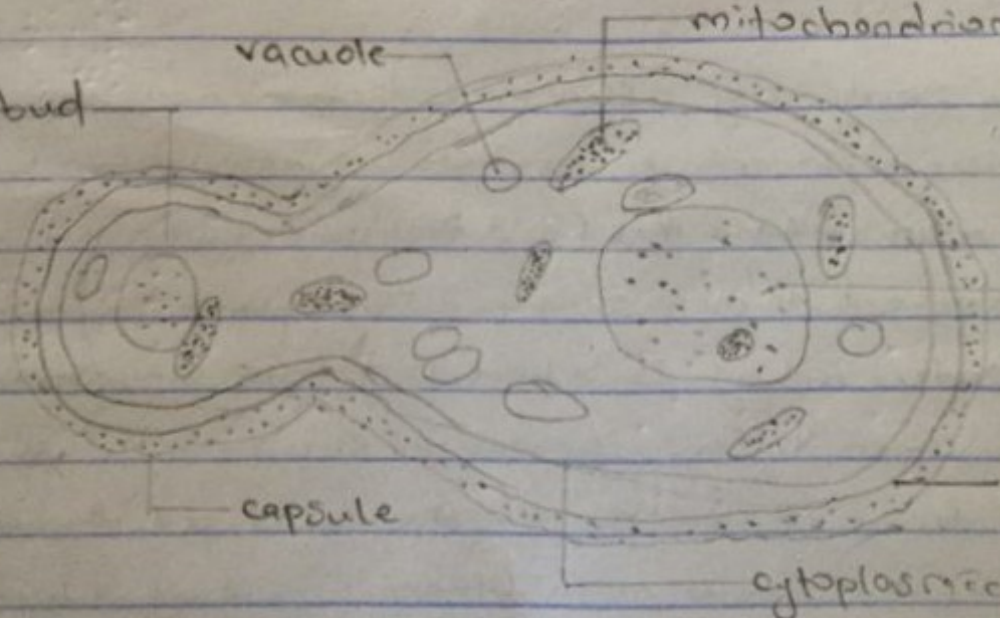
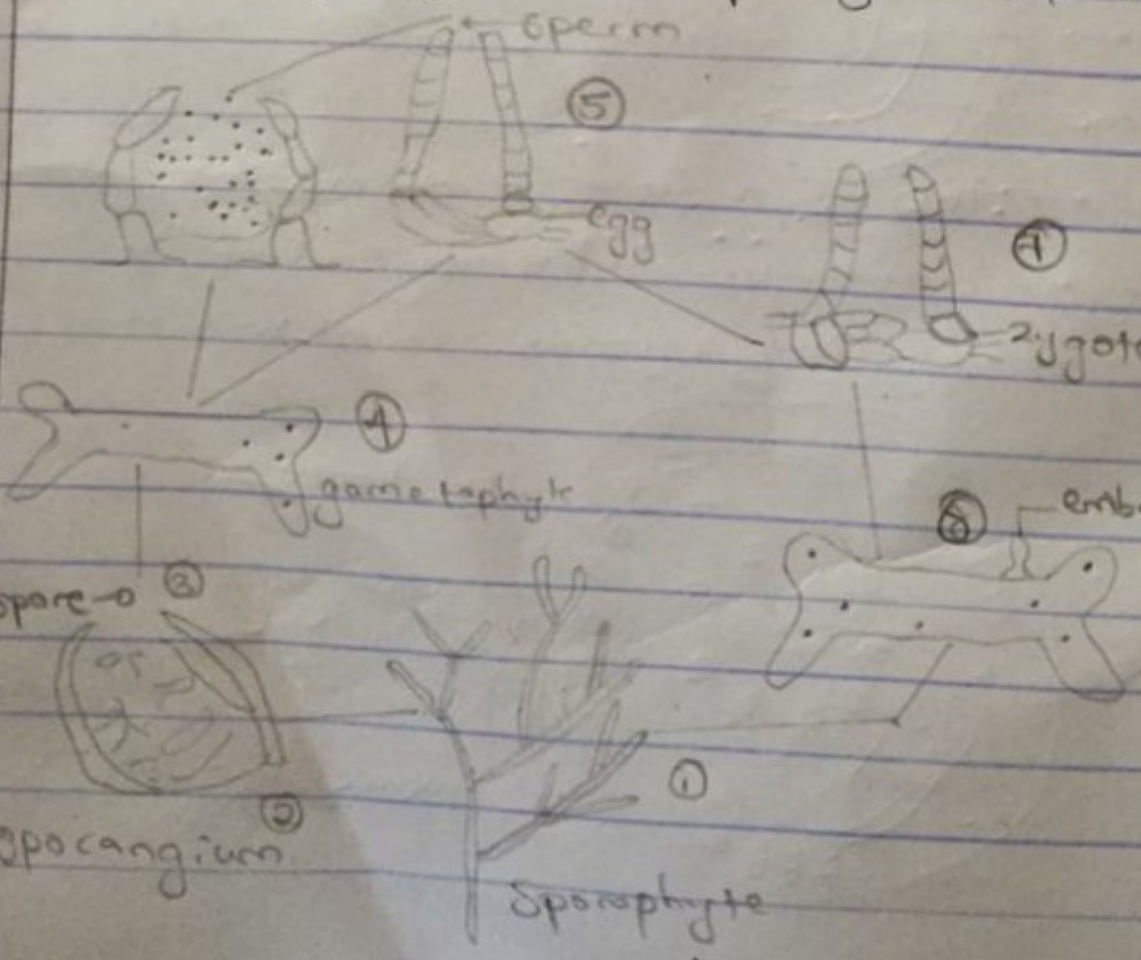


DIAGRAM OF YEAST UNDERGOING BUDDING

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

Three-lobed sporangia are borne on the vertical axis. The sporangium develops contains haploid spores that originates from diploid cells of the stem. Sporangium develops into a globose structure inside which sporogenous cells undergo meiosis to produce haploid spores. Spores after liberation germinate into cylindrical, dichotomously branched gametophytes. At maturity, the terminal ends of the cylindrical branches bear the archegonia while the antheridia are borne as protuberances lower down on the branches. Sperms having many flagella are released when antheridia are ripe which swim into the archegonia and the resulting zygote subsequently develops into a sporophyte



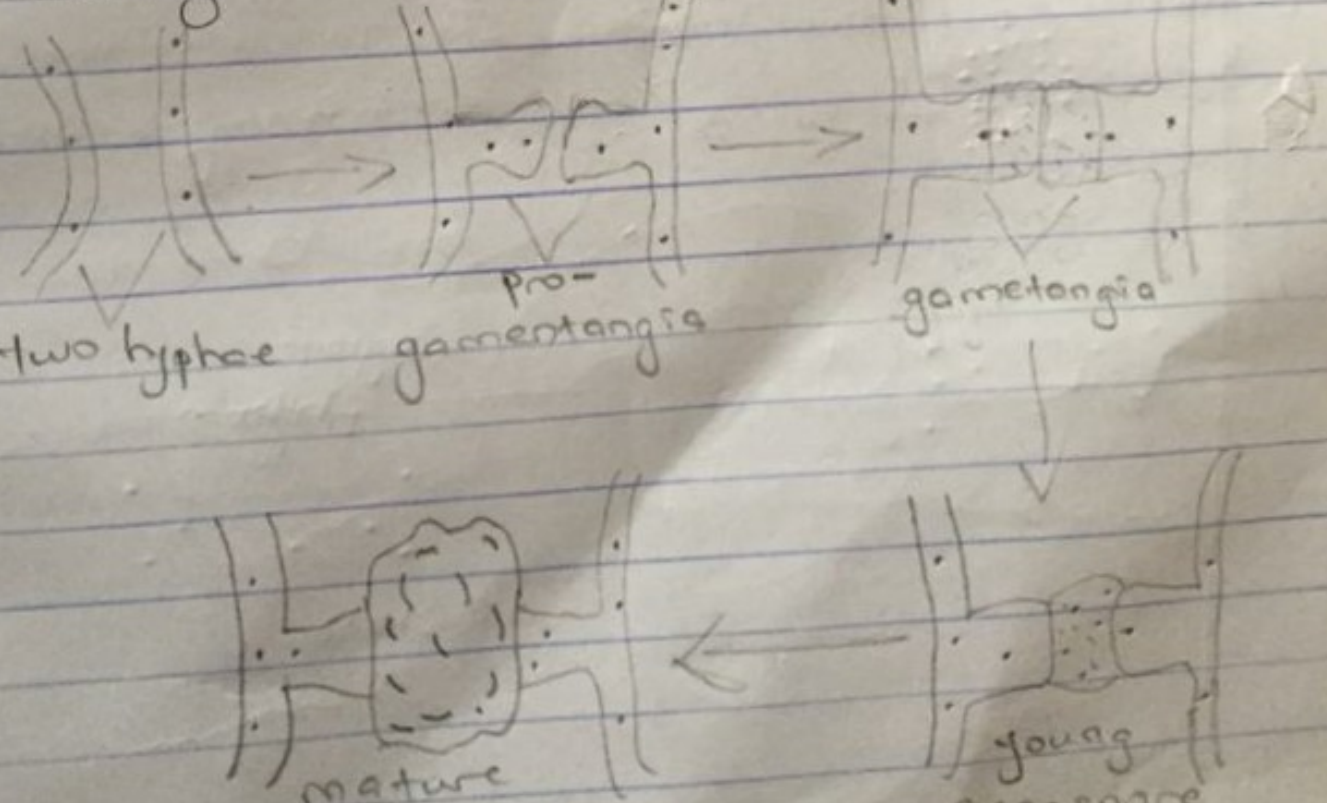
A sketched Life cycle of Psilotum

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

⇒ This occurs when two mating types of hyphae grow in the same medium. Chemical interaction in the two mating types of hyphae induces growths perpendicular to the hyphae in opposite directions. These growths are delimited by a wall such that many nuclei are isolated in a gametangium.

The two gametangia fuse 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?

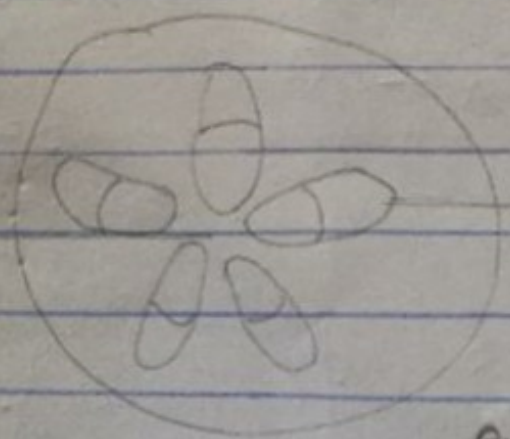
a) They have definite structures for water and nutrient absorption from the soil.

b) The aerial portion being exposed to the atmosphere demands some modifications that prevents excessive loss of water through the body surface.

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

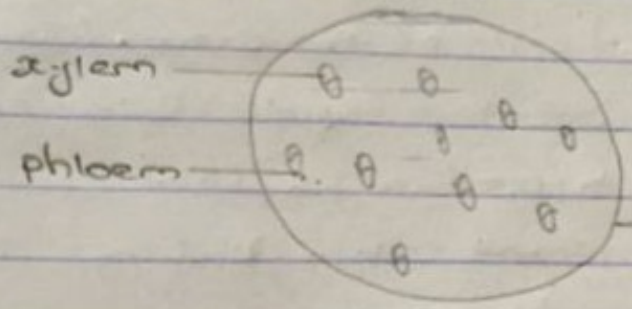
5) Describe with illustration the following terminologies:

a) eustele: This is a type of vascular organisation in herbaceous dicotyledonous plants in which the vascular bundles are discrete, concentric collateral bundles of xylem and phloem

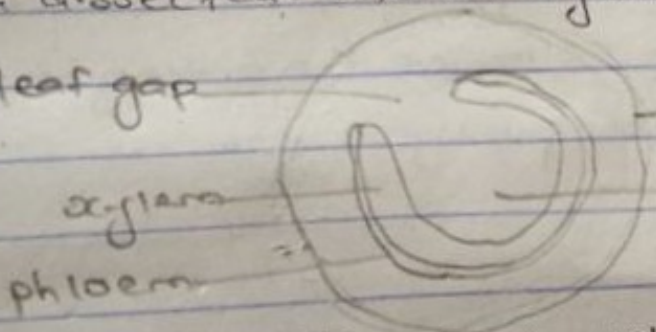


eustele

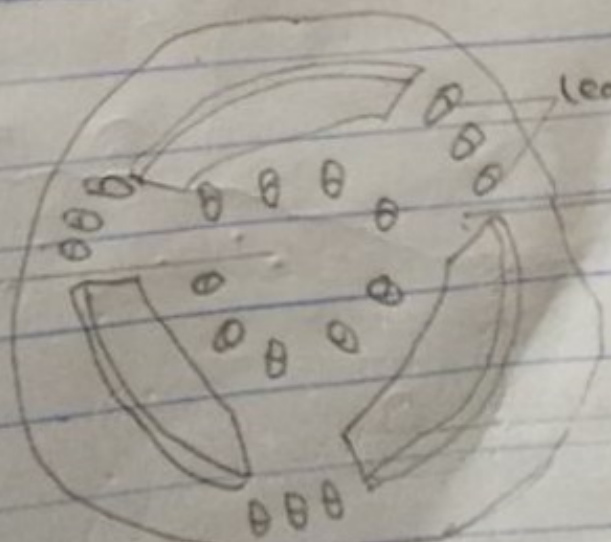
b) Atactostele: This is a type of vascular organization in grasses and many monocotyledonous plants in which the vascular bundles are scattered



c) Siphonostele: Here, vascular supply to leaves is associated with leaf gaps and the conducting cylinder is a dissected one-dictyostele



d) Dictyostele: 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



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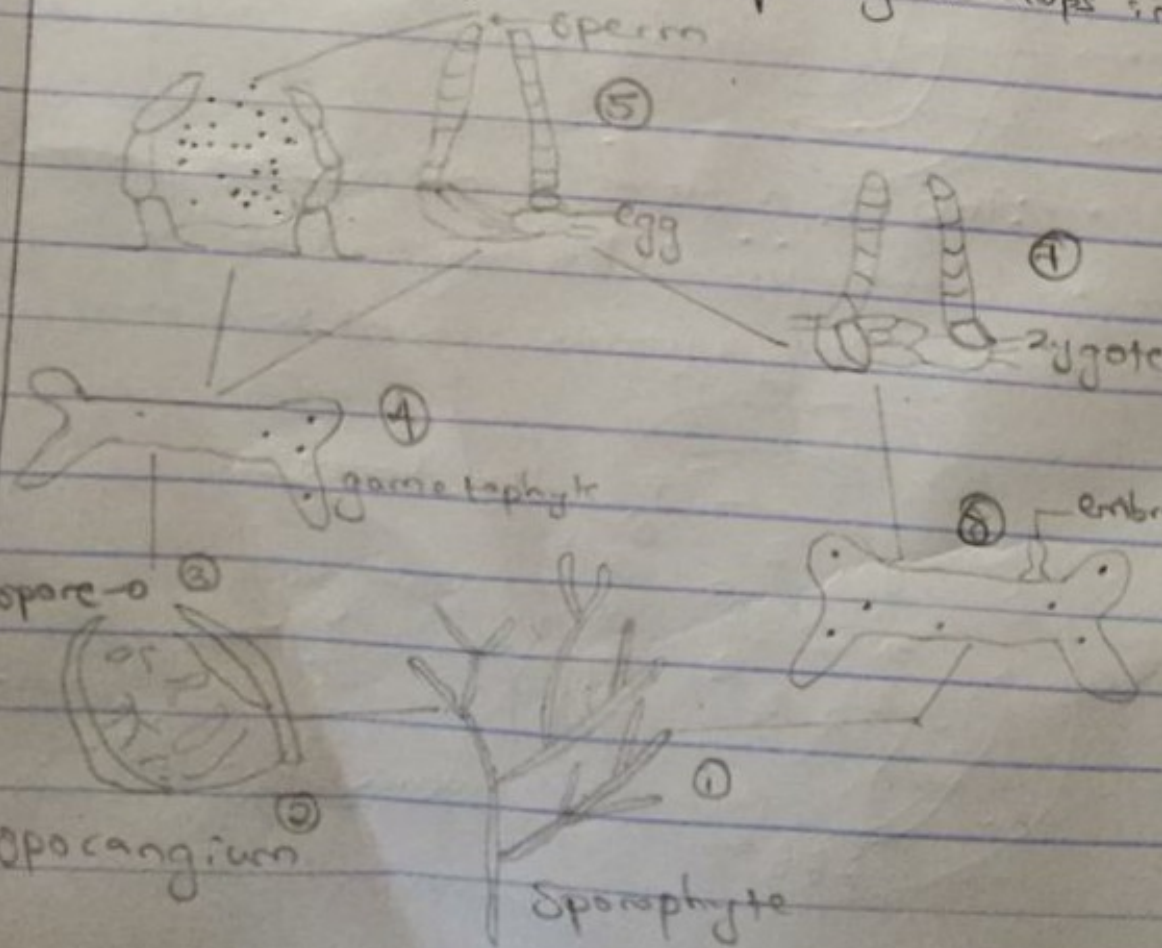

∧ Sketched Life cycle of Psilotum