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DEPT: MBBS

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Biology assignment

1. Fungi are one of the most important groups of organisms on the planet.

   Recycling: Fungi, together with bacteria, are responsible for most of the recycling which returns dead material to the soil in a form in which it can be reused.

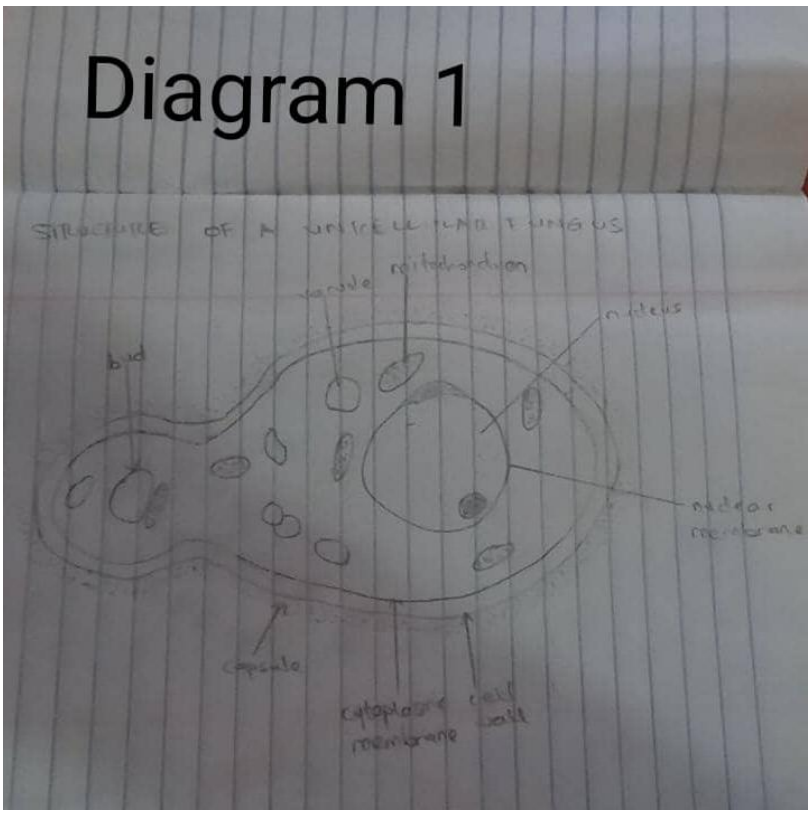
   Food: Fungi are also important directly as food for humans. Many mushrooms are edible and different species are cultivated for sale worldwide.

   Medicines: Penicillin, perhaps the most famous of all antibiotic drugs, is derived from a common fungus called Penicillium. Many other fungi also produce antibiotic substances. Certain chemical compounds isolated from the fungus may prove to be useful treatments for certain types of cancer.

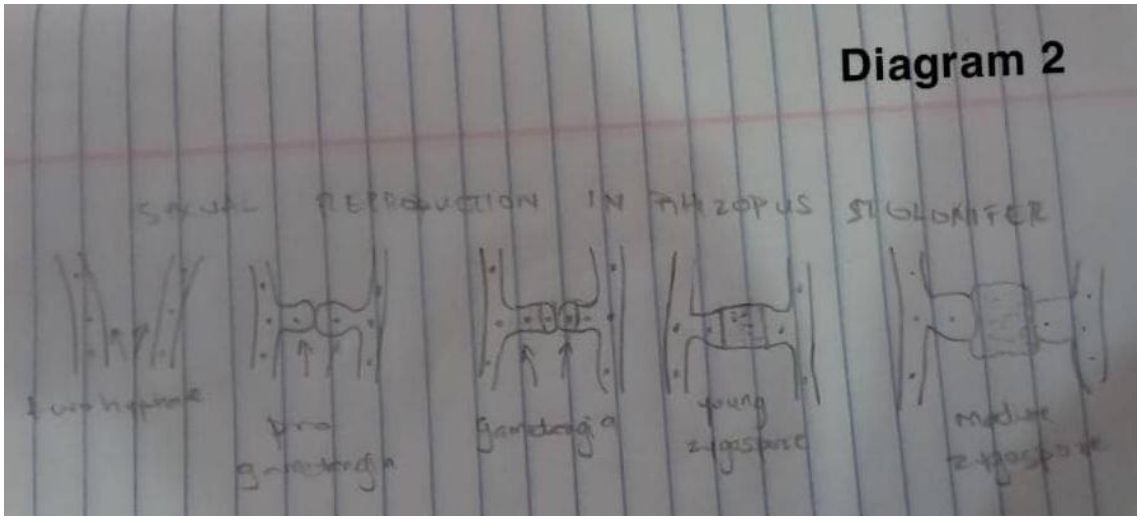
   Biocontrol: Fungi such as the Chinese caterpillar fungus, which parasitise insects, can be extremely useful for controlling insect pests of crops. The spores of the fungi are sprayed on the crop pests.

   Food Spoilage: It has already been noted that fungi play a major role in recycling organic material. The fungi which make our bread and jam go mouldy are only recycling organic matter, even though in this case, we would prefer that it didn't happen. Fungal damage can be responsible for large losses of stored food, particularly food which contains any moisture.

2.



3. Sexual reproduction takes place during unfavourable condition by means of gametangial copulation. Most Rhizopus are heterothallic. When two mycelium of opposite strain come close to each other, each mycelium produce small out growth, called progametangia. The apical region of the two progametangia come in close contact and cytoplasm of each progametangium push more and more towards the apical region which swell up with dense protoplasm. The apical region is known as gametangia and basal region is known as suspensor. The protoplasm in gametangia fuses to from zygospore. Zygospore is a resting spore. During favorable condition, spore wall rupture and form germ tube which elongates to form promycellium. Promycellium have two region; germsporangiophore and germsporangium. Nucleus in germsporanium divides by meiosis forming haploid nuclei, which gather cytoplasm and behaves as spore. The haploid spore are released and germinates to give mycellium.



4. They have definite structures for water and nutrient absorption from the soil; therfore 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.

- The aerial portion being exposed to the atmosphere demands some modifications that prevents excessive loss of water through the body surface (i.e desiccation)
- Some other modifications that permit elimination of excess water from the plant body and not only exchange of gasses between the internal parts of the plant and the atmosphere therefore openings are available on the aerial parts of the plant.

5. Eusteles: A stele typical of dicotyledonous plants that consists of vascular bundles of xylem and phloem strands with parenchymal cells between the bundles.

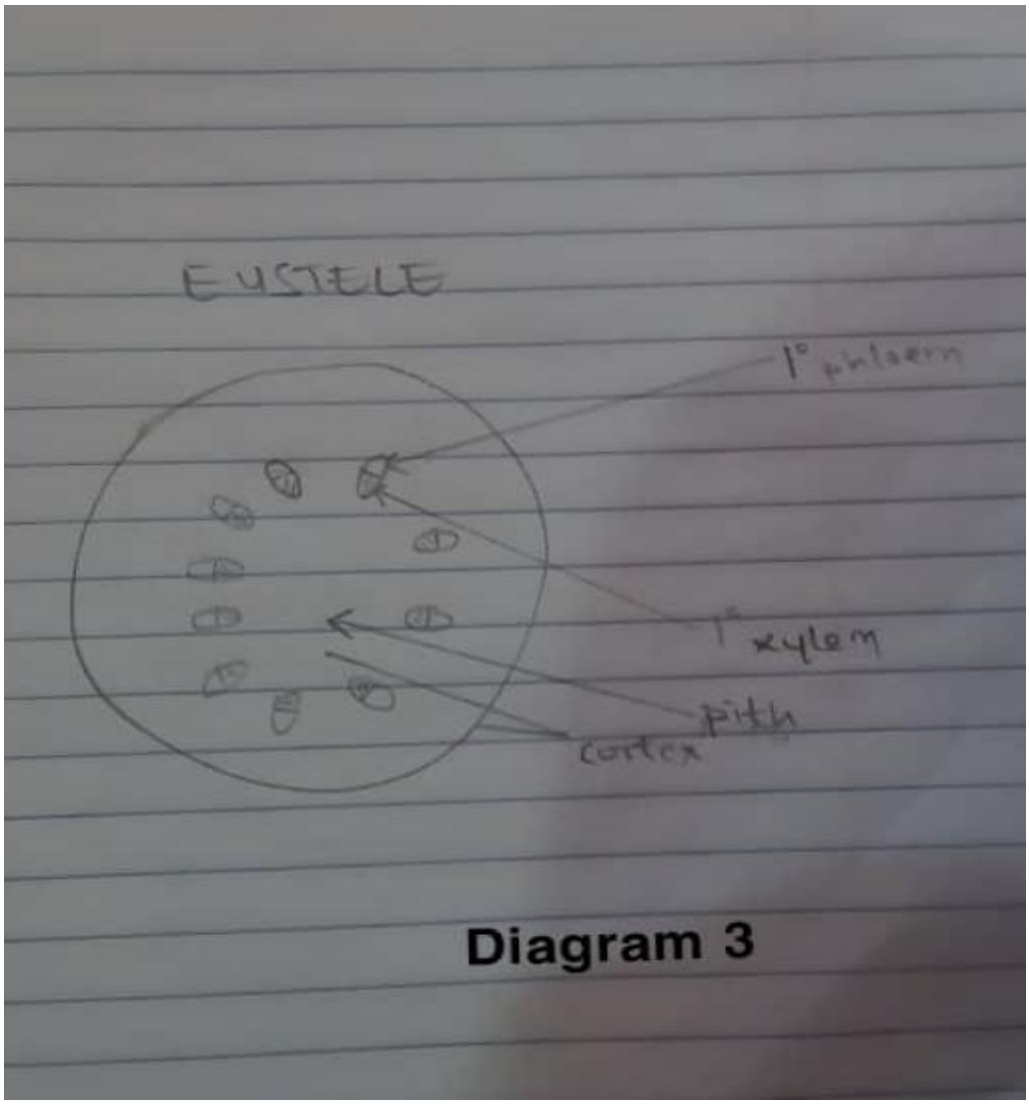


Diagram 3

Atactosteles: A type of eustele, found in monocots, in which the vascular tissue in the stem exists as scattered bundles.

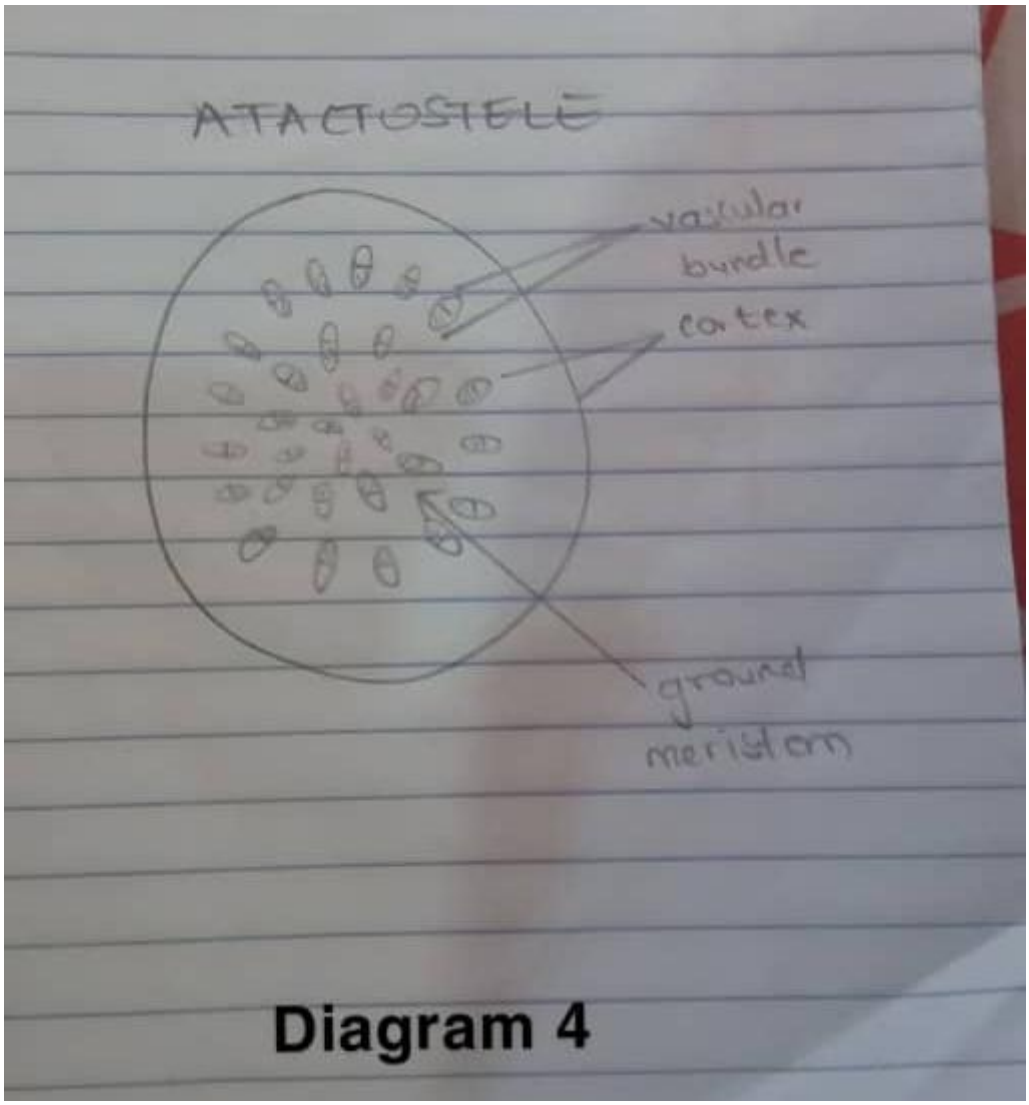
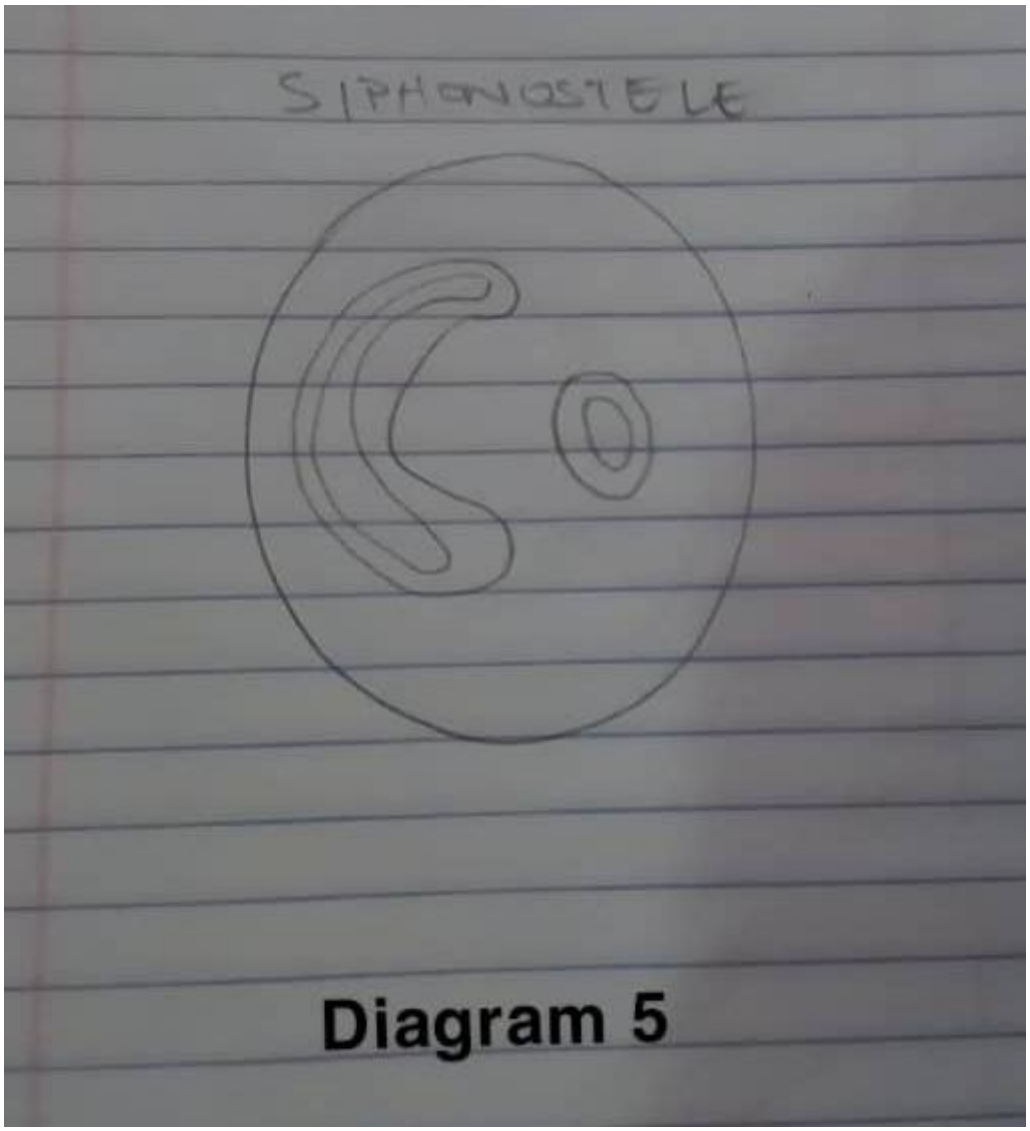


Diagram 4

Siphonostele: A stele in which the vascular tissue is in the form of a cylinder surrounding the pith, as in the stems of most ferns and other seedless vascular plants.



Dictyostele: Astele in which the vascular cylinder is broken up into a longitudinal series or network of vascular strands around central pith (as in many ferns).

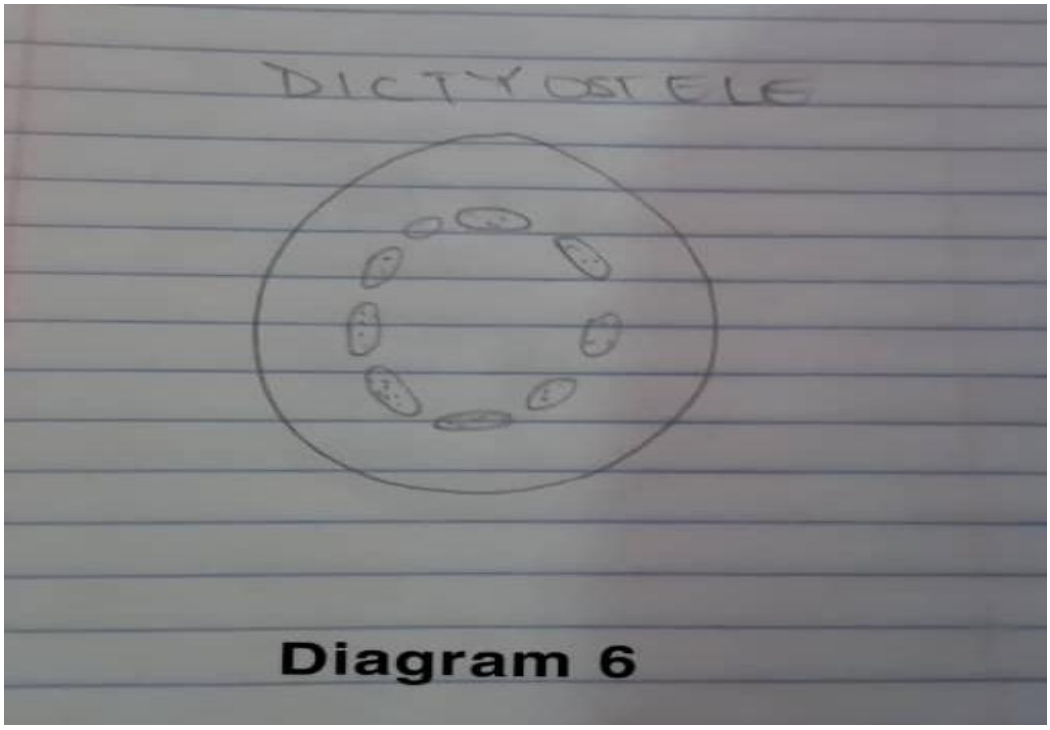
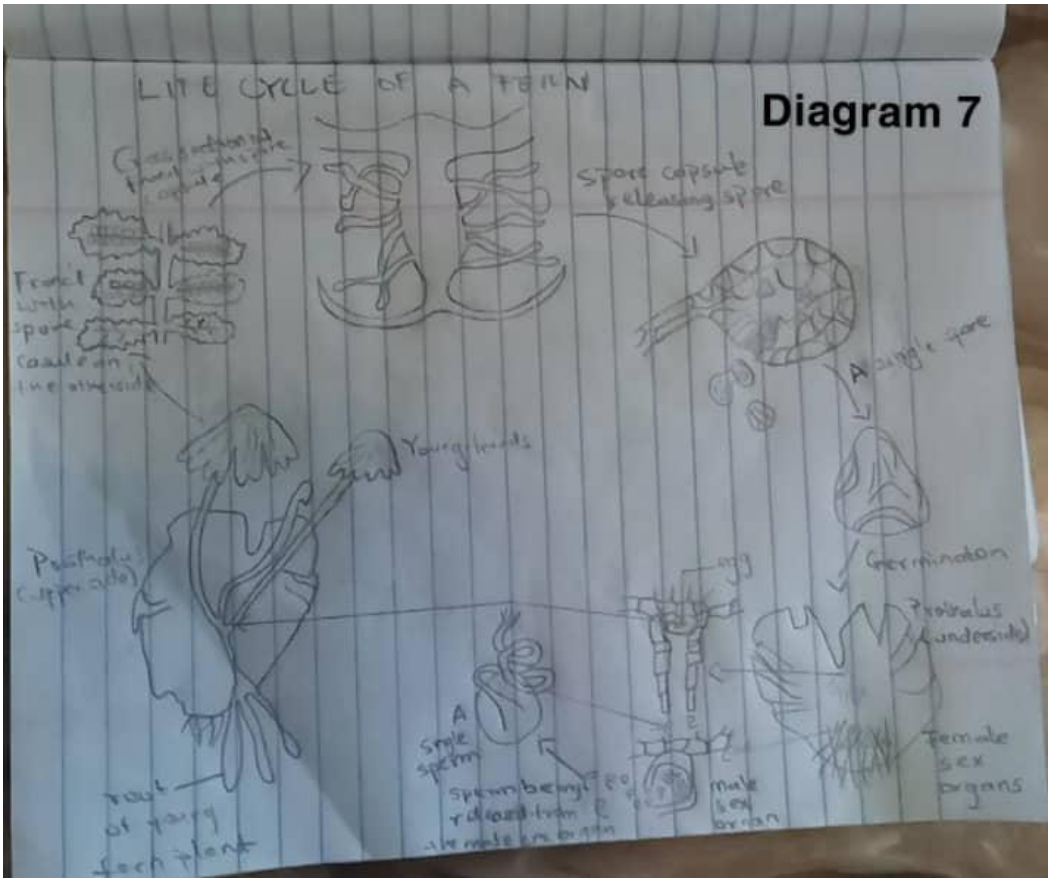

DICTYOSTELE

Diagram 6

6.


LIFE CYCLE OF A FERN
Diagram 7
spore capsule releasing spore
Germination
Female sex organs