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MATRIC NUMBER: 19/MHS02/014

DEPARTMENT: NURSING

COURSE CODE: BIO 102

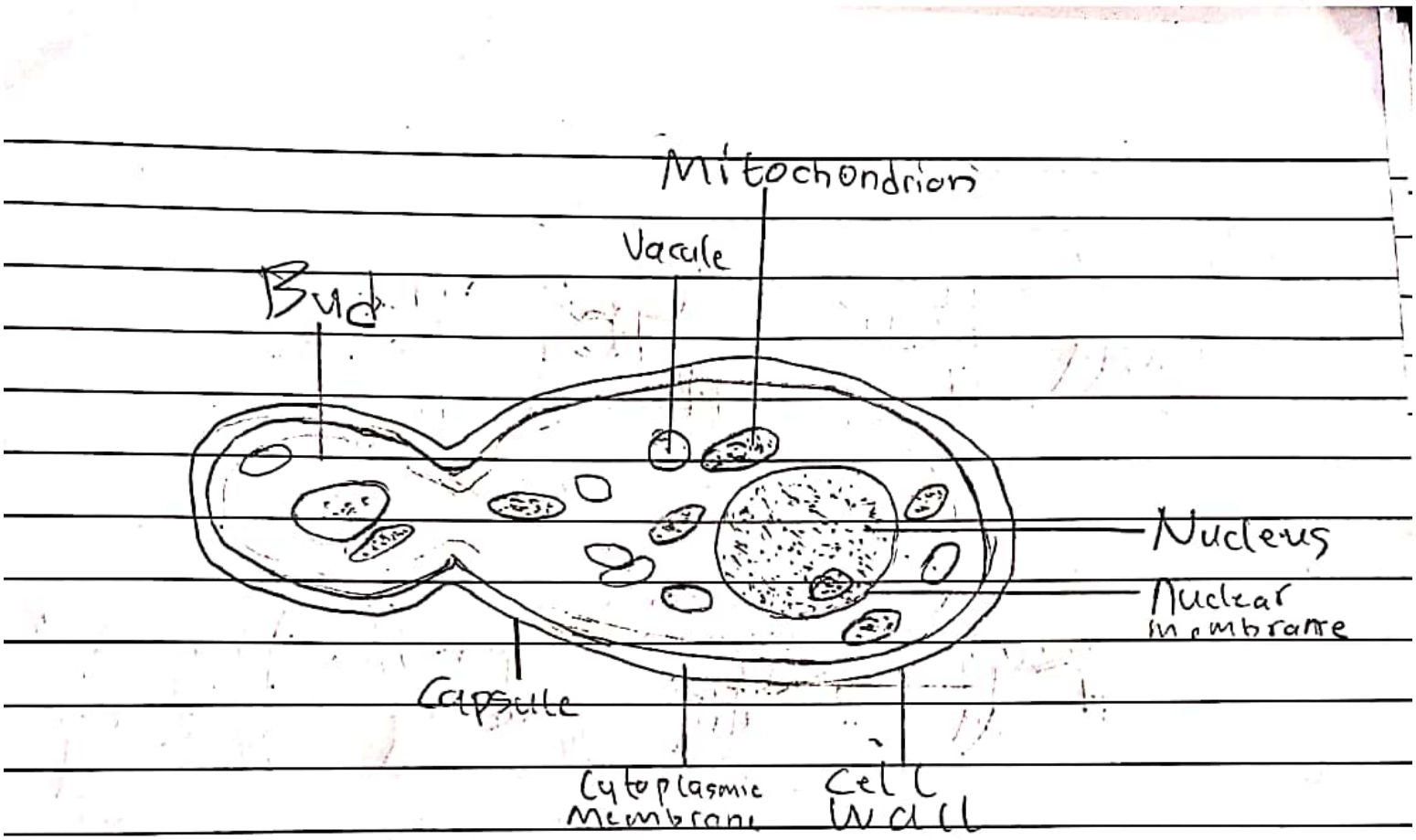
ASSIGNMENT

1. How are fungi important to mankind?

Answers

I. They are important in the human diet. E.g. mushrooms, morels are delicacies in human diet.
II. They also influence the wellbeing of human populations on a large scale because they are part of the nutrients cycle in ecosystem.
III. They also produce antibiotics to kill or inhabit the growth of bacteria, limiting their competition in the natural environments. E.g. penicillin, cephalosporin's.
IV. They are also model research organisms. Many advances in modern genetics where achieved by the use of a red bread mold fungi called Neurosporal crassa.
V. They play a major role in the productivity of farm land. E.g. mycorrhizal fungi inoculant are available as soil addictive's.

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



THE STRUCTURE OF A UNICELLULAR FUNGUS

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

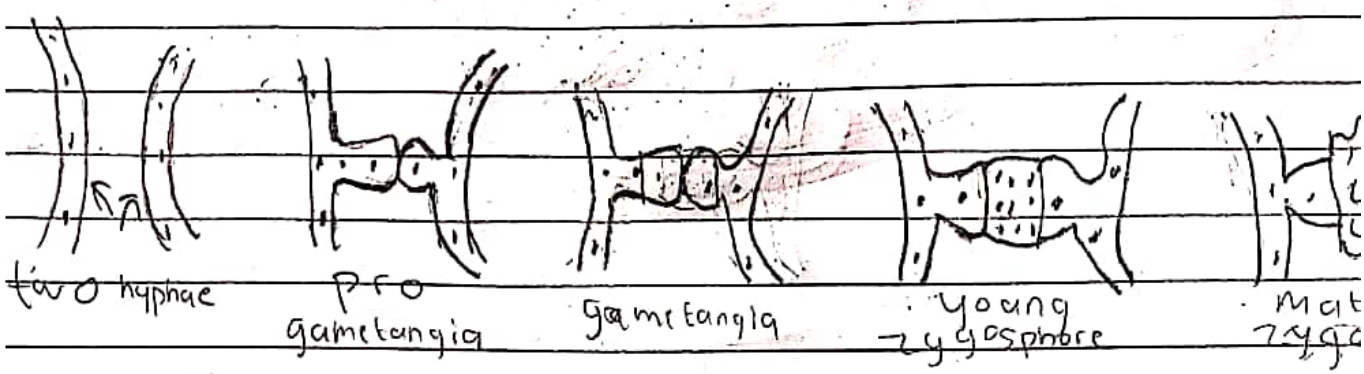
Answers

Rhizopus stolonifer.

Sexual reproduction occurs when two mating types of hyphae grow in the same medium. Chemical interaction in the two mating types of hyphae induces growth perpendicular to the hyphae in opposite direction. These growths are delimited by a wall such that many nuclei are isolated in what is called a gametangium.

The two gametangia fuse (plasmogamy) and a zygote 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.



SEXUAL REPRODUCTION IN RHIZO STOLONIFER

4 How do bryophytes adapt to their environment?

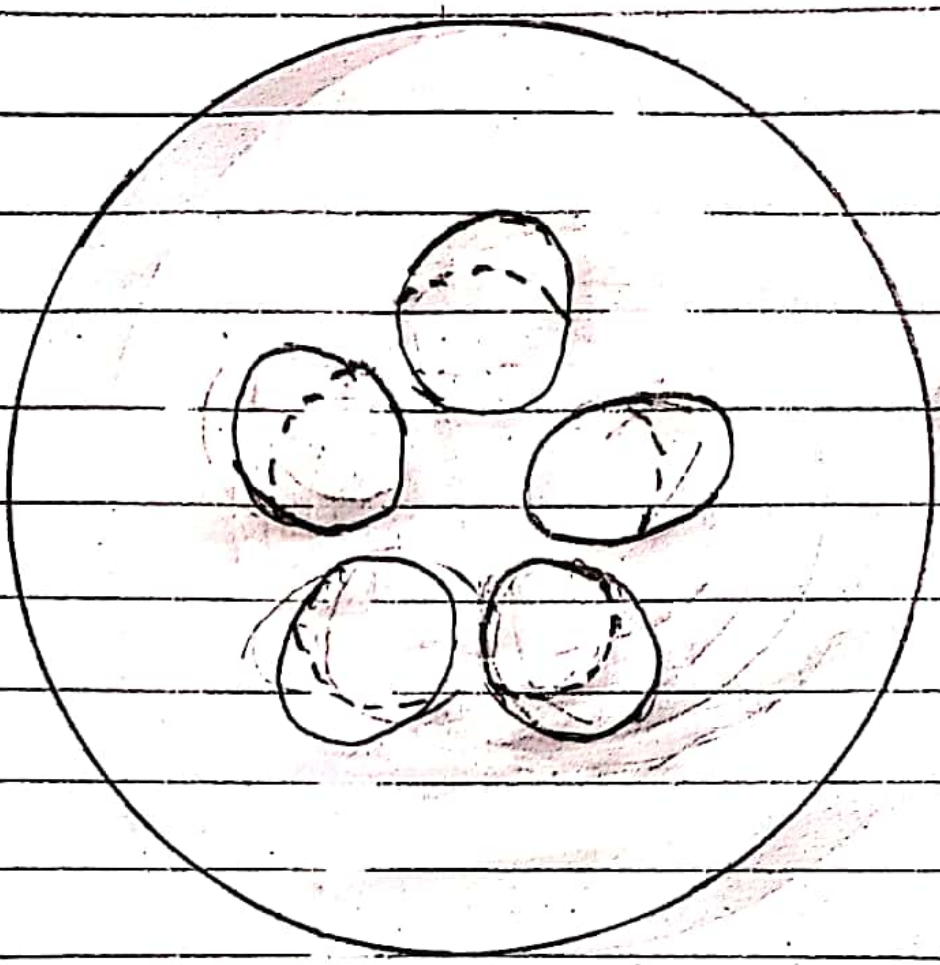
Answers

a. They have definite structures for water and nutrients absorption from the soil, therefore the plant body is divided into two (an aerial portion and a subterranean portion).
b. The aerial portion being exposed to the atmosphere demands some modifications that prevents excessive loss of water through body surface (i.e. desiccation).
c. They also have some other modifications that prevent 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 plants.

4. Describe with illustration the following terminologies:
    a. Eusteles.
    b. Atactosteles.
    c. Siphonostele.
    d. Dictyosteles.

Answers

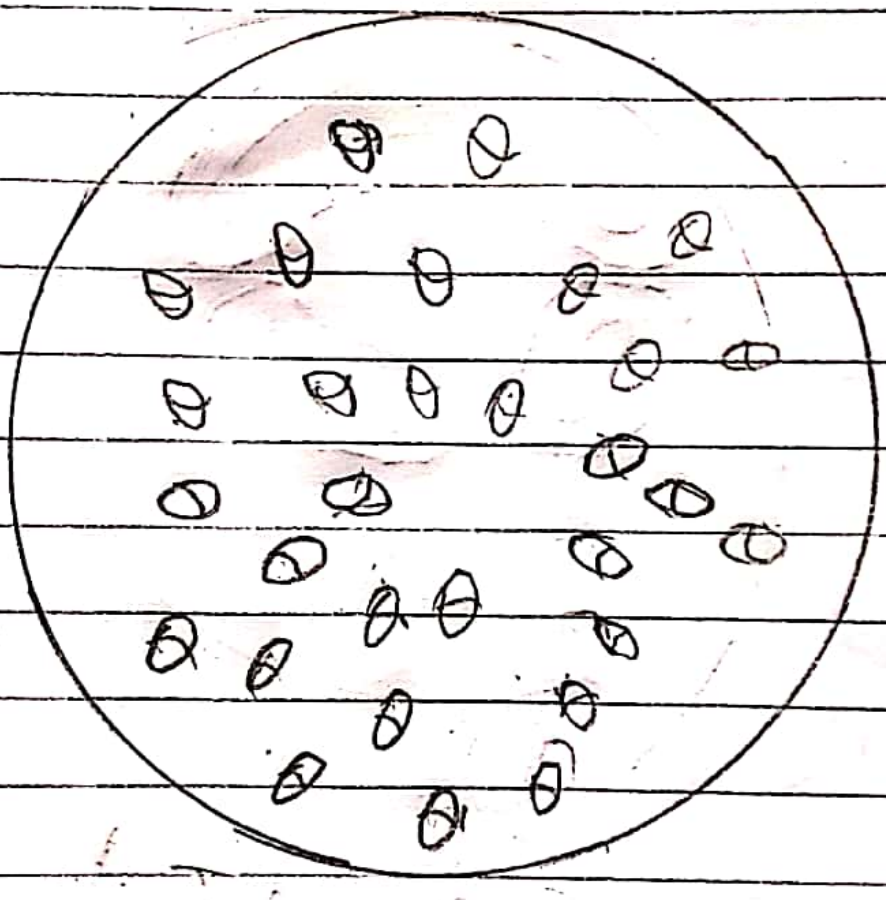
a. Eusteles.
   The vascular bundles are discrete, concentric collateral bundles of xylem and phloem and they are found in herbaceous dicotyledonous plants.



EUSTELE

b. Atactosteles

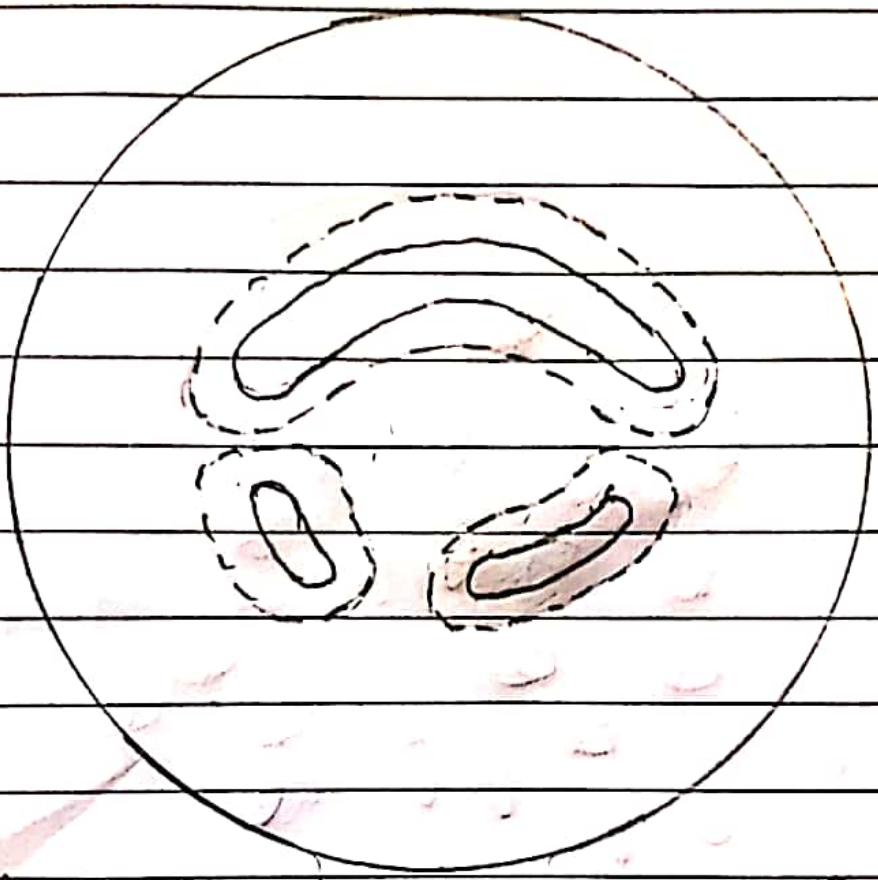
The vascular bundles are scattered and they occur in grasses and many monocotyledonous plants.



ATACTOSTELE.

c. Siphonosteles
This is a cylinder enclosing a parenchymatous pith. They are found in stems of ferns and higher vascular plants.

d. Dictyosteles.
This is a stele in which the vascular cylinder is broken up into a longitudinal network of vascular strands around a central pith. Also there is a vascular supply of leaves associated with leaf gaps. The conducting cylinder is a dissected one.



DICTYOSTELE

5. Illustrate the life cycle of a primitive vascular plant.

Answers

Psilotum.

Three- lobed sporangia (each subtended by two scales) are borne on the vertical axes. The sporangium contains haploid spores and originates from diploid cells of the stem. Sporangium develops into a globose structure inside which sporongenous cells undergo meiosis to produce haploid spores.