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MATRIC NO: 19/mhs04/002

ASSIGNMENT TITLE: GENERAL BIOLOGY II

COURSE TITLE: GENERAL BIOLOGY II

COURSE CODE: BIO 102

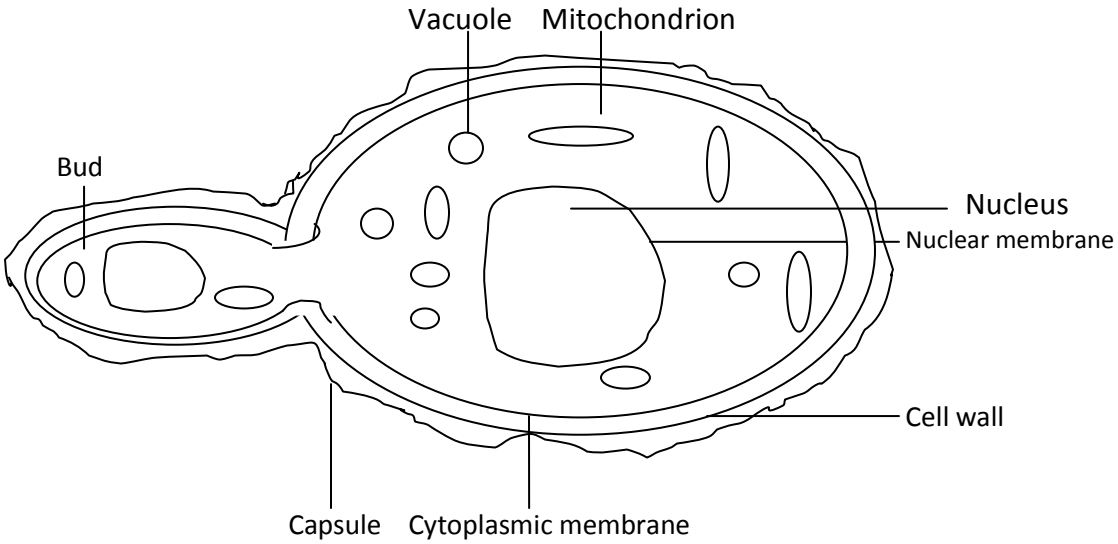
Question

1) How are fungi important to mankind?

Answer
i) Fungi like yeast are used in the food industry.
ii) Some fungi like mushroom are eaten by humans.
iii) Some species like *Penicillium notatum* produces important antibiotics.
iv) Some fungi are parasites to some offensive unbearable pests like grasshopper therefore they serve as important biological control agents in regard to such pests.
v) The Brewer or baker's yeast is used for fermentation.

vi) It helps in mediating food spoilage.

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



A WELL LABELLED DIAGRAM OF THE CELL STRUCTURE OF A UNICELLULAR FUNGUS

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

Rhizopus stolonifer

It occurs when two mating types of hyphae grow in the same medium. There is a chemical interaction in the two mating types of hyphae which induces growth that is perpendicular to the hyphae in an opposite direction. These growths are delimited by a wall so that many nuclei are isolated in a gametangium. The two gamentangia fuse and a zygote is formed. The zygote 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?

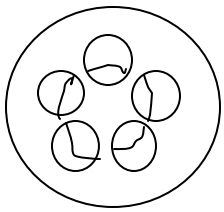
i) They have definite structures for water and nutrient absorption from the soil.
ii) The aerial portion of the plant body has been modified to prevent excessive loss of water through the body surface.
iii) There are openings available on the aerial parts of the plant that permit elimination of excess water from the plant body.

5) Describe with illustration the following terminologies: (a) Eusteles (b) Atactostele (c) Siphonostele (d) Dictyostele.

Answer

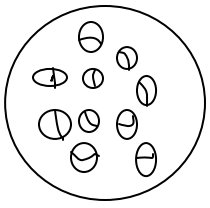
(a) Eusteles

It is a stele typical of dicotyledonous plants that consists of vascular bundles of xylem and phloem strands with parenchyma cells between the bundles.



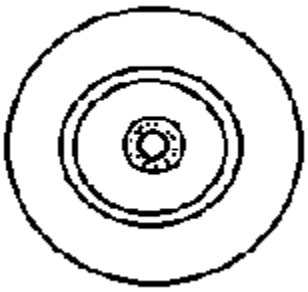
(b) Atactostele

It is a type of eustele, found in grasses and many monocotyledonous plants where the vascular tissue in the stem exists as scattered bundles.



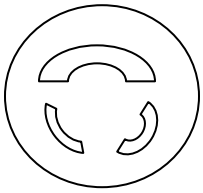
(c) Siphonostele

It is a stele consisting of vascular tissue surrounding a central core of pith parenchyma. Its vascular supply to leaf is associated with leaf gaps.



(d) Dictyostele.

it is 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 ferns).



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