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Matric Number: 19/MHS01/071

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Bio 102 Assignment

1. Classify plants according to Eichler's grouping of 1883

Ans:

DIVISION	CLASS
Thallophyta	Phycotinae (Algae) Mycotinae (Fungi)
Bryophyta	Hepatica (Liverworts) Musci (Mosses)
Pteridophyta	Psilotinate (Psilotum) Lycopodinae (Lycopodium, Selaginella) Equisetin (Horsetails) Filicinin (Ferns)
Spermatophyta	Gymnospermae (Gymnosperms) Angiospermae (Angiosperms)

2. How are algae of importance to man?

Ans:

- It serves as food for people
- The red algae provide agar and carrageen used for the preparation of various gels used for scientific research
- It's contains high iodine content which prevents goitre
- It serves as thickening agents in ice cream and shampoo
- Alginic acid from the brown algae is used to stabilize emulsions and suspensions.

3. Describe a unicellular form of algae

Ans:

Unicellular form of Algae Chlamydomonas represents the unicellular and module forms of green algae:

- It's found in stagnant water.
- It has the flagella which enables movement.
- The cell is bounded by a cellulose cell wall.
- The stigma is for photoreception

4. How does this unicellular alga described in question 3 carry out its reproduction?

Ans:

Reproduction can either be vegetative (asexual) or sexual. Vegetative results in the production of daughter cells in which the amount and quality of genetic material in the nucleus of the mother cell is maintained in the daughter cells. The amount of genetic material in the mother cell nucleus of n , the daughter cells also have n quantity of genetic material. The mitotic division maintains the quality and quantity of genetic material. Sexual reproduction It involves union of sex cell, aggregation of cells in a colony occurs under favourable conditions. These cells pair by their posterior end. This pairing is said to be isogamous because the pairing cells (gametes) are morphologically identical.

5. Differentiate between the two types of colonial form of algae

Ans:

The colonial forms in Algae:

- Pandorina
- Volvox

Pandorina	Volvox
Sexual reproduction is anisogamous	Sexual reproduction is oogamous
Unicellular motile thallus	Multicellular motile thallus
It's a genus of green alga	It's complex form of Pandorina

6. Describe a named complex form of alga.

Ans:

- Fucus:

It's a genus of the brown Algae whose species are found on rocks in the intertidal zones of the sea shores. The body of the plant is flattened, dichotomously-branched thallus with a mid-rib, a vegetative apex and a multicellular disk with which plant is attached to rock surface. The body has air bladders which is believed to aid the plant to float on the water. It varies in size from a few centimetres to about 2 metres in length. Sexual reproduction is oogamous, sex cells are produced in conceptacles which have openings (ostioles) on the surface of the thallus.