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Department :- MBBS

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ASSIGNMENT

1. Classify plants according to Eichlers grouping of 1883

In 1883 Eichler divided the Kingdom plantae into two sub kingdoms. Cryptogamae and Phanerogamae.

Cryptogamae : These are non-flowering and seedless, spore bearing plants. It is divided into three

* Division Thallophyta : Algae and Fungi
* Division Bryophyta : Mosses
* Division Pteridophyta : Ferns

Phanerogamae: These are flower bearing, seed producing tracheophytes. This sub-kingdom has only one division- Division Spermatophyta. Division Spermatophyta is divided into two namely:

* Gynospermae( Gynosperms )
* Angiospermae ( Angiosperms)

1. How are Algae of importance to man?

Algae being aquatic,the photosynthesizers give off oxygen and are producers in both freshwater and salt water ecosystems which means they are part of the process to provide food.

They are also rich in vitamins so they are used as liquid fertilizer which helps in repairing the nitrogen present in the soil.

1. Describe a unicellular form of algae

Chlamydomonas is a unicellular form of algae which is usually less than. 25 micrometres long . It has a definite cell wall and a single large cup-shaped chloroplast that contains a pyrenoid where starch is synthesized . It contains a red pigmented eyespot which makes it sensitive to light . It has two long flagella which project from the anterior end of the alga which aids movement.

1. How does this unicellular alga described in question 3 carry out it’s reproduction?

It reproduces asexually under favourable conditions and produces sexually when conditions are unfavorable . During asexual reproduction, all structures are haploid and during sexual reproduction, meiosis follows the zygote stage which is the only diploid part of the cycle.

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

|  |  |
| --- | --- |
| Pandorina | Volvox |
| Consists of a colonies of 8- 32 approx | Contains several hundreds or thousands of colonies |
| Colony center is not hollow | Colony center is hollow |
| Cells are joined by mucilage | Cells are joined by cytoplasmic strands |

1. Describe a named complex form of algae

Volvox is a complex form of green algae. A volvox colony is a hollow sphere with thousands of cells arranged in a single layer surrounding a watery interior. Volvox exhibits differentiation between somatic and reproductive cells .It carries out both sexual and asexual reproduction . The cells divide asexually to form a new daughter colony. Sexual reproduction among these algae involves oogamy.