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Course: BIO 102

Assignment

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

Answer

A system of plant taxonomy, the Eichler system was the first phylogenetic (phyletic) or evolutionary system. He gave system of classification for the whole plant kingdom. Eichler classified the plant kingdom into two sub-kingdoms. They are *Cryptogamae* and *Phanerogamae*.

A. **Cryptogamae** are flowerless and seedless plants. They are simple and flowerless plants like algae, mosses and ferns which do not produce flowers, fruits and seeds. Cryptogams are considered as lower plants.

B. **Phanerogamme** are seed bearing plants. So they are also known as spermatophytes. They are higher plants. The plant body is differentiated into roots, stem and leaves with well developed vascular system. Examples are angiosperms and gymnosperms.

2. How are algae of importance to man?

Answer

Importance of algae to man are;

- a) As a source of agar in the production of ice cream, jellies, desserts etc.
- b) Direct use of algae as food for man.
- c) Manufacture of soaps and alums.
- d) Medicines and minerals.

- e) Manufacture of iodine.
- f) Alginic acid, algin and mannitol which is used in the production of dyes, buttons and combs.
- g) Used as fertilizer.
- h) Ornamental uses.

3. Describe a unicellular form of algae.

Answer

Unicellular form of algae is also called *acellular* algae as they function as complete living organisms. Unicellular forms are common in all the groups of algae except Rhodophyceae, Phaeophyceae and Charophyceae. The unicells may be motile or non-motile.

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

Answer

Cell division or fission is the simplest method of reproduction for the unicellular forms of algae, it is often called binary fission as found in chlamydomonas. In this method the two vegetative cells divide mitotically into two daughter cells, thus finally divide into new individuals. Their reproduction is asexual.

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

Answer

Difference between Volvox and Synura

	Volvox	Synura
i.	Possess green chloroplast	Each with two golden chloroplast
ii.	They are spherical or oval hollow colonies	Colonies are roughly spherical aggregates of cells, each of which has whip-like flagella pointing outwards.

iii.	Most species of volvox reproduce both asexually and sexually such as <i>Volvox carteri</i>	Both asexual and isogamous sexual reproduction occur
iv.	Volvox can be found in ponds, puddles and bodies of still fresh water throughout the world	Synura are found in ponds and lakes with moderate to good water quality (fresh water)

6. Describe a named complex form of alga.

Answer

Spirogyra is filamentous charophyte green algae of the order of zypementales, named for the helical or spinal arrangement of the chloroplasts that is characteristic of the genus. It is commonly found in fresh water habitats, and there are more than 400 species of spirogyra in the world.