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***Course***: Biology 102

**Assignment.**

1. **Classify plants according to eichler’s grouping of 1883**

In a system of plant taxonomy, the eichler’s system was the first phylogenic (phyletic) or evolutionary system. He gave the system of classification for the whole plant kingdom. Eichler classified the whole plant kingdom into two sub-kingdoms. They are crytogamae and phanerogamae.

1. Cryptogamae: they are flowerless and seedless plants. They are simple plants like algae, mosses and ferns which do not produce flowers, fruits and seeds. Cryptogams are considered as lower plants. Crytogamae is divided into algae, bryophytes and pteridophytes.
2. Phanerogamae: they are seed bearing plants. They are also known as spermatophytes. They are higher plants and their plant body is differentiated into roots, stems and leaves with well-developed vascular system. Phanerogamae is divided into gymnosperms and angiosperms.
3. **How are algae of importance to man**
4. Direct use of algae as food for man
5. It is used as a source of mineral
6. It is used as a source of vitamins
7. It is used as a source of agar
8. It is used in medicine
9. It helps in the manufacture of iodine
10. Alginic acid, align and mannitol which is used in the production of dyes, buttons and combs.
11. It is used in the manufacture of soaps and alums
12. They are used as fertilizers
13. It is used in the manufacture of potash
14. It is used in the manufacture of light weight buildings
15. It is used in the manufacture of paper
16. **Describe a unicellular form of algae**

Unicellular algae are plant like autotrophs and contain chlorophyll. Unicellular forms of algae are also called acellular algae as they function as complete living organisms, unicellular forms are common in all the groups except rhodophycae, phaephyceae and charophyceae. The unicells may be motile or non-motile.

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

It carries out its reproduction through cell division or fission. 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 chlamydominas. In this method the two vegetative cells divide mitotically into two daughter cells, those finally divide into new individuals. Their reproduction is asexual.

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

|  |  |
| --- | --- |
| Volvox  | Synura  |
| 1. Reproduction is both sexual and asexual
 | 1. Reproduction is sexual
 |
| 1. Spherical colonies of up to 50,000 cells
 | 1. few cells in colonies
 |

1. **Describe a named complex form of alga**

Spirogyra: it is a filamentous charotype green algae of the order zygmentales named for the helical or spiral arrangement of the chloroplasts that is the characteristic of the genus. It is commonly found in freshwater habitats, and there is more than 4400 species of spirogyra in the world.

Fucus: it is 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 the 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.