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DEPARTMENT-PHARMACY

MATRIC NO-19/MHS11/117

COURSE CODE-BIO 102

ASSIGNMENT

**QUESTION 1-**Classify plants according to the Eichler’s grouping of 1883

Eichler’s system of grouping in 1883 was a system of plant taxonomy, the system was the first phyletic or evolutionary system.

He gave a system of classification for the whole plant kingdom, by classifying the whole plant kingdom into two sub-kingdom which are; (i) cryptogamae and (ii) phanerogamae

(i)*Cryptogamae*-

They are flowerless, seedless and fruitless plants.

They include ferns, algae and mosses.

They are considered as lower plants.

(ii)*Phanerogamae-*

They can also be known as spermatophytes, they are plants which bear seeds.

They have their body differentiated into roots, stems and leaves and they have a well developed vascular system.

They are higher plants.

Examples are angiosperms and gymnosperms.

**QUESTION 2**- How are algae of importance to man?

1. They can be used in the making of soaps and alums
2. They can be used in medicines and minerals
3. They can be eaten as direct food for man
4. They can be used as a source of agar in the production of ice-creams and jellies.
5. They can be used in manufacturing iodine

**QUESTION 3**- Describe a unicellular form of an algae

Unicellular form of an algae which are also called acellular algae because on their own they function as complete living organisms.

The unicells can be motile or non-motile

All groups of algae are acellular except from the Rhydophyceae, Phyaeophycaea and the Charophyceae.

**QUESTION 4-** How does unicellular alga as described in question 3 carry out its reproduction

They undergo asexual reproduction.

The method or reproduction carried out is fission which is the simplest method of reproduction for the unicellular algae.

This method involves the two vegetative cells dividing through mitosis into two daughter cells, which finally divide to give individual organism.

It is formally known as binary fission in Chlamydomonas .

**QUESTION 5-** Differentiate between the two colonial forms of algae

Using - Synura and Volvox

|  |  |
| --- | --- |
| Synura | Volvox |
| 1. Undergoes only sexual reproduction. | Undergoes sexual and asexual reproduction |
| 1. Presence of few cells in colonies | Presence of spherical colonies with up to 50,000 cells. |

**QUESTION 5**-Describe a named complex form of alga.

Organism- Spirogyra

Kingdom- Plantae

Division- Charophyta

Class- Zygnematophyceae

Order- Zygnematales

Genus-spirogyra

Family-Zygnemataceae

CELL STRUCTURE

They are filamentous algae.

They consist of thin unbranched chains of cylindrical cells.

Each cell of filament has a large central vacuole with the nucleus suspended by strands of cytoplasm.

The chloroplasts form a spiral around the vacuole and they have specialized bodies known as pyrenoids that store starch.

The cell wall consists of an inner layer of cellulose and an outer layer of pectin responsible for the slippery texture of the algae.

REPRODUCTION

Spirogyra can reproduce either sexually or asexually. Asexual or vegetative reproduction is by simple fragmentation of the filaments while sexual reproduction is by a process called conjugation where the cells of two filaments lying side by side are joined by outgrowths called conjugation. This allows the contents of one cell to completely pass into and fuse with the contents of the other. This results into a fused cell (ZYGOTE) becomes surrounded by a thick wall and overwinters, while the vegetative filaments die.

HABITAT

It is found in freshwater habitats around the world.