**NAME: IGBAFE MAGDALENE AGUMELE**

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**DEPARTMENT: ANATOMY**

**COURSE: BIO 102**

1. Eichler classified the plant kingdom into two sub-kingdoms namely; Cryptogamae and Phanerogamae.
2. **Cryptogamae (Gk. Kryptos meaning concealed; gamos meaning marriage):** The crytogams 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 lower plants examples are; Algae, Bryophytes, Pteridophytes.
3. **Phanerogamae:** They are seed bearing plants and they are known as spermatophytes (Gk. Sperma meaning seed; phyton meaning plant). They are higher plants and the plant body is differentiated into roots, stem and leaves with well-developed vascular system. Examples are; Gymnosperms, Angiosperms (monocotyledons and dicotyledons).
4. Importance of Algae to man

* used as direct source of food for sea animals and fishes
* It contains high mineral content
* It serves as food to man
* As a source of agar
* Used for medicines and minerals
* For the manufacture of iodine
* Alginic acid, align and mannitol production
* Manufacture of soaps and alums
* As a fodder for hens and milk cattle
* For the manufacture of potash
* Used as fertilizers
* Manufacture of paper and ornamental uses
* Nitrogen fixation by blue green algae (cyanobacteria)

1. A unicellular form of Algae

Unicellular forms of algae are 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. The motile unicells are either rhizopo­dial or flagellated and the non-motile cells may be spiral filament as found in Spirulina.

**CHLAMYDOMONAS is a good example of a unicellular green algae.**

* It is found in stagnant water,
* its flagella helps in locomotion,
* Cell is bounded by a cellulose cell wall.
* It has photoreception for stigma

1. Reproduction in Chlamydomonas

Chlamydomonas reproduces both sexually and asexually:

1. **sexual reproduction:**

Whenever, two isogametes of different mating types are collided by chance, they are contacted with each other towards their flagella ends. Both gametes unite and form a diploid. The zygote soon loses its flagella, develops a thick wall around it and becomes relatively more resistant to unfavourable growth conditions. With the return of favourable ecological conditions, zygote undergoes meiosis and produces four haploid, motile zoospores, each of which grows into a vegetative cell.

1. **asexual reproduction:**

The nucleus divides to produce up to sixteen offspring cells within the parent cell wall. Each cell develops flagella and secretes a wall around itself. The cells then secrete an enzyme that breaks down the parent cell wall by which they can escape.

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| **Volvox** | **Pandorina** |
| 1. Multicellular motile thallus | 1. Unicellular motile thallus |
| 1. Sexual reproduction is oogamus | 1. Sexual reproduction is anisogamus |
| 1. It is a complex form of pandorina | 1. It is a genus of green algae |

1. **Fucus**

This 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 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. Its sexual reproduction is oogamous, sex cells are produced in

conceptacles which have openings (ostioles) on the surface of the thallus.