

**IHECHERE NNABUEZE WILSON**

**19/MHS01/198**

**MBBS**

**BIO 102 ASSIGNMENT**

1. Eichler's grouping of 1883:

DIVISION	CLASS
<ul style="list-style-type: none"><li>• Thallophyta</li></ul>	Phycotinae (Algae) Mycotinae (Fungi)
<ul style="list-style-type: none"><li>• Bryophyta</li></ul>	Hepaticae (Liverworts) Musci (Mosses)
<ul style="list-style-type: none"><li>• Pteridophyta</li></ul>	Psilotinate (Psilotum) Lycopodinae (Lycopodium, Selaginella) Equisettinae (Horsetails) Filicinae (Ferns)
<ul style="list-style-type: none"><li>• Spermatophyta</li></ul>	Gymnospermea (Gymnosperms) Angiospermea (Angiosperms).

2. Importance of Algae to man.

- It contains high iodine content which prevents goitre.
- It serves as food for people.

- It serves as thickening agent in ice cream and shampoo.
- Alginic acid from brown algae is used to stabilize emulsions and suspensions.
- Red alga provides agar and carrageen which is used in the preparation of various gels used for scientific research.

3. The unicellular form of algae of my choice:

### **Chlamydomonas.**

- Chlamydomonas can be found in stagnant water.
- It possesses a stigma for photoreception.
- The cell is bounded by a cellulose cell wall.
- The mitochondria mediate the elaboration of energy molecules.
- Manufactured sugar is processed into starch on the pyrenoid.
- It possesses flagella for locomotion.

### 4. REPRODUCTION IN CHLAMYDOMONAS

Its reproduction can either be Vegetative or Sexual.

**Vegetative Reproduction:** This type of reproduction results in the formation of 4 daughter cells in which each daughter cell has the same quality and quantity of genetic materials as the parent cell. In chlamydomonas, a cell which is about to divide loses its flagella then undergoes mitotic division leading to 2 nucleus, cell walls are elaborated which delimits cytoplasm around each nucleus. Increase in the population of cells in a colony is achieved by repeated mitotic division.

**Sexual Reproduction:** This type of reproduction in chlamydomonas involves the union of sex cells. The involved cells pair at their posterior ends. This pairing is said to be **isogamous** because the cells involved are morphologically identical. Aggregation of cells in chlamydomonas occurs under favourable conditions. Sexual reproduction involves meiosis which produces 4 genetically unique haploid cells that later grow into mature cells.

5. The two types of colonial forms of algae are
- I. Pandorina
  - II. Volvox

PANDORINA	VOLVOX
Contain only 16 cells in the colony.	Cells in the colony may be up to a thousand.
Sexual reproduction is anisogamous	Sexual reproduction is oogamous
It's a genus of green algae	It's a complex form of pandorina
Unicellular motile thallus	Multicellular motile thallus.

6. Complex form of algae: **Fucus.**

**FUCUS:**

This is a genus of brown algae whose species are most times 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 (a reproductive apex at maturity) and a multicellular

disk (also known as “hold fast”) which helps in the attachment of plants to rock surface. The plant also possesses air bladders with which they are said to float on water surfaces with. There are various species of *fucus* and they may vary in size from a low of centimetres to a high of about 2 meters. They also vary in terms of where their sex cells are found. They could be found in the same chamber or in different chambers on plant bodies.

It undergoes sexual reproduction which is oogamous and their sex cells are produced in conceptacles which have openings called *ostioles* on the surface of the thallus.