**NAME: AKWIDO EWOMAZINO MERCY**

**DEPARTMENT: MBBS**

**MARTIC NO.: 19/MHS01/080**

**COURSE CODE: BIO 102**

**1.)**

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| **DIVISION** | **CLASS** |
| I.) Thallophyta | Phycotinae (Algae)  Mycotinae (Fungi) |
| II.) Bryophyta | Hepaticae (Liverworts)  Musci (Mosses) |
| III.) Pteridophyta | Psilotinate (Psilotum)  Lycodinae (Lycodium, Selaginella)  Equisetinae (Horsetails)  Filicinae (Ferns) |
| IV.) Spermatophyta | Gymnospermea (Gymnosperms)  Angiospermae (Angiosperms) |

**2.)**

Alga are of importance to man in different ways and they are as follows;

I.) They can be used as cosmetics

II.) They are considered nutritious because of their high protein content and high concentration of minerals, trace elements and vitamins.

III.) They have high iodine content therefore prevents goitre.

IV.) In the ice-cream and shampoo industry, it is used as a thickening agent.

V.) It serves as food to people and livestock

VI.) They serve as drugs to ward off diseases.

**3.)** Chlamydomonas represents the unicellular and motile form of green algae. It is found in stagnant water usually along with forms. It has flagella which serves as its structure for movement. Its cell is bounded by a cellulose cell wall which contains organelles e.g. nucleus, mitochondria, stigma (eyespot), pyrenoid, etc.

- The nucleus carries the genetic program for the cell.

- The stigma is for photoreception.

- The mitochondria mediate the elaboration of energy molecules.

- Manufactured sugar is processed into starch on the pyrenoid.

**4.)** In the Chlamydomonas, reproduction can either be vegetative (asexual) or sexual.

* **For the vegetative reproduction**, the amount and quality of genetic materials in the nucleus of the mother cell is maintained in the daughter cells during reproduction i.e. if the mother cell nucleus is n, the daughter cells also have n quality of genetic materials. It is therefore said that it undergoes mitotic divisions. When a cell is about to divide in the Chlamydomonas, it loses its flagella. The cell undergoes mitotic division leading to two nuclei, cell walls are elaborated which delimit cytoplasm around each nucleus i.e. two daughter cells (zoospores) are released. Increase in the population of cells in a colony is achieved by repeated mitotic divisions.
* **Sexual reproduction** involves fusion of sex cells (gametes). In Chlamydomonas, aggregation of cells (clumping) in a colony occurs under favorable conditions. These cells pair by their flagellated ends. This pairing is isogamous because the pairing cells (gametes) are morphologically identical. The cytoplasm of the gametes fuse (plasmogamy) and the flagella are lost. The two nuclei fuse (karyogamy) and this situation is essentially a fertilization process so that a zygote is formed. After karyogamy sometimes, the zygote undergoes two successive cell divisions in which the first restores the haploid condition by halving the nuclear material in the two resulting nuclei (reduction division) while in the second division each haploid nucleus undergoes a normal mitotic division. These two divisions will end up with four cells and with n quantity of nuclear material are known as meiosis. The four products of meiosis are released as haploid zoospores.

**5.)**

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| **PANDORINA** | **VOLVOX** |
| 1.) Sexual reproduction is isogamous | Sexual reproduction is oogamous |
| 2.) It exists as a colony | It exists as a cell |
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**6.)** A complex form of algae is the FUCUS.

It is a genus of the brown algae whose species are often found on rocks in the intertidal zones of the sea shores. The plant body is flattened, dichotomously-branched thallus with a mid-rib, a vegetative apex, a reproductive apex at maturity and a multicellular disk (hold fast) with which plant is attached to rock surface. The plant body also has air bladders which is believed to aid the plant to float on water. Various species of focus exist; vary in size from a few centimeters to about 2 meters in length. They also very in terms of where the sex cells are found. Sexual reproduction is oogamous, sex cells are produced in conceptacles which have openings (ostioles)non the surface of the thallus.