**Good day Sir,**

**I’d like to apologize for the late submission. I have no plausible excuse for it. But hopefully, you forgive the late submission and accept this assignment. I’m so sorry.**

**Thank you,**

**Erumwunse Josephine (Miss)**

**Assignment Title:** GENERAL BIOLOGY II

**Course Title:** General Biology II

**Course Code:** BIO 102

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**Matric no.:** 19/MHS01/158

**Department:** MBBS **College:** MHS **Level:** 100

**Question**

1. Classify plants according to Eichler’s grouping of 1883.

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| --- | --- |
| DIVISION | CLASS |
| THALLOPYTA | Phycotinae (algae)  Mycotinae (fungi) |
| BRYOPHYTA | Hepaticae |
| PTERIDOPHYTA | Psilotinate(psilotum)  Lycopodinae (lycopodium, selaginella)  Equisetinae (horsetails)  Filicinae (ferns) |
| SPERMATOPHYTA | Gymnospermae (gymnosperms)  Angiospermae (angiosperms) |

1. How are algae of importance to man?
2. It is harvested for food and cosmetics in the far East
3. Used in making fertilizers
4. Used as a thickening agent in ice cream and shampoo, drugs to ward off diseases
5. Used as fodder in fish farming
6. Has high Iodine content therefore prevents goitre
7. Describe a unicellular form of algae.

Chlamydomonas represents the unicellular and motile forms of green algae. It is usually found in stagnant water usually along with other forms. Their structures of mobility are the flagella. The cell is bounded by a cellulose cell wall; contains organelles e.g nucleus, mitochondria, stigma (eyespot), cup-shaped chloroplast, pyrenoid etc. The chlamydomonas uses the stigma for photoreception. The mitochondria mediate the elaboration of energy molecules. Manufactured food is processed into starch in the pyrenoid.

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

Reproduction in chlamydomonas can either be vegetative (asexual)mor sexual.

Asexually, vegetative reproduction results in production of daughter cells in which the amount and quality of genetic material in the nucleus of the mother is n, the daughter cells also have the n quantity of genetic material. This kind of cell division is known as mitotic cell division. In chlamydomonas, a cell about to divide loses its flagellum. The cell undergoes mitotic division resulting in two nuclei. Cell walls are elaborated which delimits cytoplasm around each nucleus.

Sexually, certain environmental conditions e.g lack of nutrients or moisture may trigger the haploid cells to undergo this from of reproduction. Instead of forming spores, these haploid cells form gametes that have two different mating sprains. These opposite mating strains fuse via **ISOGAMY** to form a diploid gamete, containing two sets of chromosomes. After a period of dormancy, these zygotes undergo meiosis. These cell division produces four genetically unique haploid cells that grow into mature cells.

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

The two colonial forms of algae are pandorina and volvox; pandinora is a colony usually found in water bloom. The colony consists of 16 cells attached to one another. Each cell has many attributes in common with chlamydomonas. In this colony, sexual reproduction is achieved by **anisogamous** pairing. WHILE, volvox is also a colony that shows more complex forms than pandorina. There are more cells in this colony, numbers may run into thousands and are connected with cytoplasmic strands that run through the cells. Sexual reproduction in this colony is **oogamous**.

1. Describe a named complex form of alga.

FUCUS is known by common names: **bladder racks, black tong, rock weed, sea oak, cut weed, rock wrack** is a genus of green brown algae whose species are often found on rocks in the intertidal zones i.e. sea shores. It usually has a life span of four years. They feature bladder-like floats (pneumatocysts), disk-shaped holdfasts for clinging to rocks and mucilage-covered blades that resist desiccation and temperature changes. This plant body is flattened, dichotomously-branched thallus with a midrib, a vegetative apex at maturity and a multicellular disk with which the plant is attached to rock surfaces. The plant body also have air bladders which is believed to aid the plant in floating on water. There are various species of focus that exist. They vary in size and also vary in terms of whether the sex cells are found in the same sexual chamber on different plant bodies. It is a dioecious organism. Sexual reproduction here is **oogamous**, sex cells are produced in conceptacles which have openings on the surface of the thallus.