Name: **NWANKWO KAMSIYOCHUKWU ADANNA**

Matric No.: **19/MHS01/263**

Department: **MBBS**

Course Code: **BIO 102**

Assignment

**Number 1**: Eichler’s Grouping of 1883;

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| DIVISION | CLASS |
| Thallophyta | Phycotinae (Algae)  Mycotinae (Fungi) |
| Bryophyta | Hepaticae (Liverworts)  Musci (Mosses) |
| Pteridophyta | Psilotinate (Psilotum)  Lycopodinae (Lycopodium, Selaginella)  Equisetinae (Horsetails)  Filicinae (Ferns) |
| Spermatophyta | Gymnospermae (Gymnosperms)  Angiospermae (Angiosperms) |

**Number 2**: Importance of Algae;

* Algae serves as food for man.
* They have high iodine content therefore prevent goiter.
* They are source of some chemical extracts used extensively in the food, pharmaceutical, textile and cosmetic industries.
* Brown Algae yield Alginic acid which is used to stabilize emulsions and suspensions found in products such as; syrup, ice cream and paint.
* Different species of red algae provide agar and carrageen used for the preparation of various gels used in scientific research.
* Agar from red algae is also used in the food industry to stabilize pie fillings and preserve canned meat and fish.

**Number 3**: A unicellular form of algae;

Chlamydomonas represents the unicellular and motile forms of green algae. It is found in stagnant water along with other forms. It has the flagella for mobility. The cell is bounded by a cellulose cell wall; containing organelles. The stigma is for photo reception. The mitochondria mediate the elaboration of energy molecules. Manufactured sugar is processed into starch on the pyrenoid.

Reproduction can either be vegetative (asexual) or sexual.

**Number 4**: Reproduction in unicellular algae;

Reproduction can either be vegetative (asexual) or sexual.

Vegetative reproduction results in the production of daughter cells in which the amount and quality of genetic material in the nucleus of the mother cell is maintained in the daughter cells. Thus, if the amount of genetic material in the mother cell nucleus is n, the daughter cells also have n quantity of genetic material. The mitotic division maintains the quality and quantity of genetic material.

Sexual reproduction involves union of sex cells (gametes). Aggregation of cells in a colony occurs under favorable conditions. These cells pair by their posterior ends. This pairing is said to be isogamous because the pairing cells (gametes) are morphologically identical. Two cells each with n quantity of genetic material undergo karyogamy (fusion of nuclei) to produce a single cell with 2n(diploid) genetic material.

After karyogamy sometimes, the zygote undergoes two successive cell divisions. The first restores the haploid condition while in the second each haploid nucleus undergoes a normal mitotic division.

They end up with four cells.

**Number 5**: Differentiate between the two colonial forms of algae;

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| --- | --- |
| Pandorina | Volvox |
| Sexual reproduction is anisogamous | Sexual reproduction is oogamous |
| Unicellular motile thallus | Multicellular motile thallus |
| It’s a genus of green algae | It’s a complex form of pandorina |

**Number 6**: Complexed form of algae;

**Fucus:** It 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 centimeters to about 2 meters in length.

Sexual reproduction is oogamous, sex cells are produced in conceptacles which have openings (ostioles) on the surface of the thallus.