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**Matric no: 19/MHS01/041**

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) |

1. Importance of Algae to man:

* Serves as food for people and livestock.
* It is used in drugs to ward off diseases.
* It contains high iodine content which prevents goiter.
* It serves as thickening agents in ice cream and shampoo.
* Alginic acid from the brown algae is used to stabilize emulsions and suspensions.

1. Unicellular form of Algae: Chlamydomonas.

* It’s found in stagnant water.
* Flagella enables movement.
* The cell is bounded by a cellulose cell wall.
* Presence of stigma for photoreception.

1. Reproduction:Reproduction in a unicellular alga(Chlamydomonas) 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. The amount of genetic material in the mother cell nucleus of n, the daughter cells also have n quantity of genetic material. The process is through mitotic division which maintains the quality and quantity of genetic material.

*Sexual reproduction* involves the union of sex cells(gametes). In Chlamydomonas, aggregation of cells in a colony occurs under favourable conditions. These cells pair by their posterior, flagellate ends. This pairing is said to be isogamous because the pairing cells(gametes) are morphologically identical. The process is essentially a fertilization process whereby two haploid cells fuse(karyogamy) to produce a single diploid material. The zygote then secretes a thick cell wall called a zygosphore and may remain dormant for some time before undergoing two successive cell divisions and eventually producing four haploid cells released as zoospores.

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| Differences between the two types of colonial form of algae. | |
| Pandorina | Volvox |
| Sexual reproduction is anisogamous. | Sexual reproduction is oogamous. |
| Unicellular motile thallus. | Multicellular motile thallus. |
| Consists of 16 cells attached to one another. | Cells may number up to thousands. |
| All cells form new colonies. | Only the larger cells at the posterior ends divide to form new colonies. |

1. Complex form in the Algae: Fucus.

* It’s 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 two meters in length.
* Sexual reproduction is oogamous, sex cells are produced in conceptacles which have openings (ostioles) on the surface of the thallus.