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**MATRICULATION NUMBER: 19/MHS01/062**

**DEPARTMENT: Medicine and Surgery**

**COLLEGE: MHS**

1. **Eichler's grouping of 1883 DIVISION CLASS**

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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) |

2.) **Importance of Algae to man**

1. It serves as food for people.
2. The red algae provide agar and carrageen used for the preparation of various gels used for scientific research.
3. It’s contains high iodine content which prevents goiter.
4. It serves as thickening agents in ice cream and shampoo.
5. Alginic acid from the brown algae is used to stabilize emulsions and suspensions.

3.) **Unicellular form of Algae**

Chlamydomonas represents the unicellular and module forms of green algae.

It’s found in stagnant water.

It has the flagella which enables movement.

The cell is bounded by a cellulose cell wall.

The stigma is for photoreception.

It contains nucleus, mitochondria, eyespot, cup-shaped chloroplast, pyrenoid etc.

4**. REPRODUCTION**

Reproduction can either be vegetative (asexual) or sexual reproduction.

Vegetative reproduction results in the production of daughter cells (zoospores) 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 mitotic division maintains the quality and quantity of genetic material.

Sexual reproduction: It occurs in unfavorable conditions. Two strains are formed (positive and negative strain). They fuse in a process called isogamy to form a diploid zygote (2 sets of chromosome). This pairing is said to be isogamous because the pairing cells(gametes) are morphologically identical. Plasmogamy and karyogamy occurs. The zygote releases a thick cell called zygospore. The diploid zygote undergoes two cell divisions. The first being that it divides into two haploid cells (reduction division). The second, being that each haploid cell divides by mitosis. These divisions’ ends up producing four haploid cells called 4 haploid zoospores, each with n quantity of nuclear material.

5.) **THE COLONIAL FORMS IN ALGAE**

a.) Pandorina

b.) Volvox

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| PANDORINA | VOLVOX |
| Sexual reproduction is anisogamous | Sexual reproduction isoogamous |
| Unicellular motile thallus | Multicellular motile thallus |
| It is a genus of green algae | It is a complex form of pandorina |

6.) **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 are 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.The diploid generation is the dominant.