ODEDIRE AARON INIOLUWA

19/MHS01/276

MEDICINE AND SURGERY

BIO 1O2 ASSIGNMENT

1. **Classify Plants according to Eilcher’s 1883 grouping**

Answer:

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

1. **Importance Of Algae:**

They serve as food for fish

They are used in the manufacture of cosmetics

They are used as thickening agents in the production of shampoo, ice cream and cosmetics

They are used to stabilize emulsions and suspensions

1. **Unicellular forms of algae has:**

Flagella for mobility

Cellulose cell wall with organelles contained within

Pyrenoid for processing of manufactured starch

Cup shaped chloroplast present

Stigma for photoreception

1. **Reproduction in Unicellular forms of alga.**

Vegetative Reproduction

In chlamydomonas, a cell about to divide 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

In chlamydomonas, aggregation of cells(clumping) in a colony occurs under favorable conditions. These cells pair by their posterior(flagellated) ends. This pairing is said to be isogamous because the pairing cells(gametes) are morphologically identical. The cytoplasm of the pairing cells fuse(plasmogamy ) and the flagella are lost. The two nuclei fuse(karyogamy); this situation is essentially a fertilization process so that a zygote is formed. In other word, two cells each with n quantity of genetic (nuclear) materials (i.e haploid nuclear material) undergo karyogamy(fusion of nuclei)to produce a single cell with 2n (diploid) nuclear material. The zygote secretes thick cell wall called a zygospore and may remain dormant in that state for sometime.

After karyogamy sometimes, the zygote undergoes two successive cell divisions the first division restores the haploid condition by halfing the nuclear material in the two resulting nuclei (reduction division) while in the second division haploid nucleus undergoes a normal mitotic division. These two divisions which end up with four cells and with n quantity of nuclear material are together known as meiosis. The four products of meiosis are released as haploid zoospores

1. **Differentiate between the two colonial forms of algae.**

* Pandorina
* Volvox

|  |  |
| --- | --- |
| Pandorina | Volvox |
| * Sexual reproduction is anisogamous. | * Sexual reproduction is oogamous. |
| * This colony is made up of 16 cells. | * Cells here may run into thousands. |

1. **Describe a named complex form of algae.**

Fucus

It is a genus of brown algae whose species are often found on rocks in the intertidal zones of the sea shores. Has a flattened body, dichotomously-branched thallus with a midrib, a vegetative apex, a reproductory apex at maturity and a multicellular disk (hold fast)with which the plant is attached to rock surfaces.it has air bladders which are believed to help the plant float water. There are various species of fucus. It undergoes sexual reproduction, oogamous.