**IBENEME CHIOMA SARAH**

**19/MHS01/188**

**MBBS**

**BIOLOGY ASSIGNMENT**

**1.**

| DIVISION | CLASS |
|---|---|
| Thallophyta | Phycotinea [algae]<br>Mycotinea [Fungi] |
| Bryophyta | Hepaticae [liver worts]<br>Musci [mosses] |
| Pteridophyta | Psilotinate [psilotum]<br>Lycopodinae [lycopodium, salanigella]<br>Equisetinae [horsetails]<br>Pilicinae [ferns] |
| Spermatophyta | Gymnospermae [gymnosperm]<br>Angiospermae [angiosperms] |

**2. Algae is important as food for fish**

**ii. Seaweeds are source of 3 chemical extracts used extensively in food , pharmaceutical, textile and cosmetic industries.**

**iii. Brown algae yields alginic acid which is used for stabilizing emulsions and suspensions found in products such as syrups, ice cream and paints.**

**3. Clamydomonas represents the unicellular form of algae.**

**They are found in stagnant water usually along other forms.**

**Flagella are the structures for mobility.**

**The cell is bounded by cellulose walls; containing organelles eg; nucleus, mitochondria, stigma [eye spot], cup-shaped chloroplast, pyrenoid etc.**

**The nucleus carries the genetic programme of the cell, the sigma for photoreception.**

**The mitochondria mediate the elaboration of energy molecules and manufactured sugar is processed into starch on the pyrenoid.**

**4. Clamydomonas carry out both asexual and sexual reproduction.**

**Asexual reproduction**

**This results in production of daughter cells in which the amount and quality of genetic material in the mother cell is maintained in the daughter cell.**

**In a Clamydomonas, the cell about to divide, losses it's flagella, then 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.**

**Sexual reproduction.**

**Instead of forming into spores, the haploid cells form gametes that have two different mating strains, which are structurally similar, and are negative and positive strains. opposite mating strains come together in a process called Isogamy to form a diploid zygote with two sets of chromosomes.**

**In Clamydomonas, aggregation of cells in a colony occurs under favorable conditions. These cells pair by their posterior [flagellated] ends. This pairing is isogamous because the pairing cells are morphologically identical. The cytoplasm of the pairing cells fuse together [plasmogamy] and the flagella are lost. The two nuclei fuse [karyogamy], this situation is essentially a fertilization process so that a zygote is formed material. He zygote secretes a thick cell wall called zygospore and may remain in that state for some time.**

**5. The colonial algae are the Pandorinas and the volvox.**

| Pandorinas | volvox |
|---|---|
| They are less complex. | They are more complex because cells show greater level of specialization and differentiation. |
| They exist in colonies of 16 cells. | Their cells run into thousands. |
| Each cell is capable of undergoing 4 mitotic processes. | Only the bigger cells [gonidia] are capable on undergoing cell division. |
| They carry out sexual reproduction by Anisogamy | They carry out sexual reproduction by Oogamy |

**6. The Fucus.**

**They are a genus of brown algae whose species are often found on rocks in the intertidal zones of sea shores.**

**The plant body is flattened, dichotomously-branched thallus with a midrib, a vegetative apex, a reproductive apex (at maturity) and a multicellular disk (hold fast) with which the plant is attached to rock surface.**

**The plant body also has air bladders which is believed to help tem float in water.**

**Various species of focus exists; vary in size from a few centimeters to 2metres in length.**

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