OGBONNA JUSTICE NNAOMA

19/MHS01/286

MBBS

BIO102

QUESTIONS

1)Classify plants according to Eichler’s grouping of 1883

DIVISION CLASS

* THALLOPHYTA PHYCOTINAE(ALGAE)

MYCOTINAE(FUNGI)

* BRYOPHYTA HEPATICAE(LIVERWORTS)

MUSCI(MOSSES)

* PTERIDOPHYTA PSILOTINATE(PSILOTUM)

LYCOPODINAE(LYCOPODIUM, SELAGINELLA) , EQUISETINAE (HORSETAILS), FILICINAE(FERNS)

* SPERMATOPHYTA

ANGIOSPERMAE ( ANGIOSPERMS)

GYMNOSPERMAE(GYMNOSPERMS)

2)HOW ARE ALGAE OF IMPORTANCE TO MAN

* It serves as food for people and livestock, thickening agents in ice cream and shampoo, drugs to ward off diseases
* They are considered nutritious because of their high protein content and high protein contents and high concentrations of minerals, trace elements and vitamins.
* Algae have high iodine content therefore prevent goiter
* Seaweeds are a source of three chemical extracts used extensively in the food, pharmaceutical, textile and cosmetic industries.
* Algae have been used for centuries, especially Asian countries, for their purported powers to cure or prevent illnesses e.g. cough, gout, gallstones etc

3)DESCRIBE A UNICELLULAR FORM OF ALGAE

**Chlamydomonas** represents the unicellular and motile forms of green algae found in stagnant water usually along with other forms. Flagella are the structures for mobility. The cell is bounded by a cellulose cell wall; contains organelles e.g. nucleus, mitochondria, stigma(eyespot), cup-shaped chloroplast, pyrenoid etc. the nucleus carries the genetic programme of the cell; the stigma is for photoreception. The mitochondria mediate the elaboration of energy molecules. Manufacture sugar is processed into starch on the pyrenoid.

4)HOW DOES THIS UNICELLULAR ALGAE DESCRIBED IN QUESTION 3 CARRY OUT ITS REPRODUCTION

In chlamydomonas, reproduction can either be vegetative( asexual) or sexual.

**Vegetative reproduction** results in 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 generic material in the mother cell nucleus is n, the daughter cells also have n quantity of generic material.

The kind of cell division which maintains the quantity and quality of genetic material is called mitotic divisions. It is responsible for increase in number of cells in unicellular organisms. In the 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**

They may develop gametes in conditions such as lack of moisture e.t.c these gametes are referred to as ‘mating strains”- these strains fuse together in a process called isogamy to form aa zygote with two sets of chromosomes, which encloses itself under unfavorable conditions (period of dormancy) when conditions become favorable it undergoes meiosis to produce 4 haploid daughter cells.

5)DIFFERENTIATE BETWEEN THE TWO TYPES OF COLONIAL FORM OF ALGA

* PANDORINA colony consist of 16 cells attached to one another while VOLVOX Run into thousands and connected with cytoplasmic strands that run through the cells
* The sexual reproduction in PANDORINA is achieved by anisogamous while that of VOLVOX is oogamous
* All 16 PANDORINA cells form new colonies while in VOLVOX, not all cells form new colonies

6)DESCRIBE A NAMED COMPLEX FORM OF ALGA

**FUCUS**

A geunus of brown algae whose species are often found on rocks in the intertidal zones of the sea shores.

The plant body is flattened, dichotomously-branched thallus with a mid-rib, a vegetative apex, a reproductive apex at maturity, and a multicellular disk(hold fast) with which plant is attached to rock surface. The plant body also has air bladders which is believed to aid the plant to float on the water. Various species of fucus exist; varying in in size from about a few centimetres to about 2 metres in length.