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DEPT:PHARMACY

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\*Assignments\*

\*1\*. Classify plants according to Eichler's grouping 1883.

Class

Thallophyta

Phycotinae (algae)

Mycotinae (fungi)

Bryophyta

hepatica (Liverwort)

music (Mosses)

Pteridophyta

Lycopodinae (selaginella lycopodium)

Equistinae (horse tail)

Fellicinae (Ferns)

Psilotinate (psilotum)

Spematophyta

Angiospemae (Angiosperm)

gymnospemae(Gymnosperms )

\*2\*. How are algae important to man?

Although algae are microscopic plants they are very important to man directly or indirectly. Algae are important in the following ways:

1. They are used in pharmaceutical industries.
2. They serves as food to small fishes.
3. They are use as food for life stock in some part of the world.
4. Red algae can be used to preserve canned food and canned fishes.
4. Brown algae can be used for thickening of emulsion, syrups.
5. They are used in the production of gels for industrial use.
6. It are used in forensic medicine.
7. It contains high amount of iodine which prevents goiter.
8. It is used for stabilizing emulsions, syrup.
9. It use in phylogenic study of plants.

\*3\*. Describe a unicellular form of algae

The unicellular form (a cellular) of algae is known as chlamydomonas which is also the motile form of algae.it has structures such as:

1. Flagella: for mobility
2. Nucleus: controls all activities in the cell and carries genetic materials of the cell.

3. Chloroplast: cup shaped chloroplast.
4. Mitochondria: power house of the cell (chlamydomonas)
5. Eye spot: for photoreception.
6. Pyrenoid: processing of manufactured sugar into starch.

Habitat: the habitat is said to be aquatic; stagnant water.

Reproduction: it exhibit both vegetative (a sexual) and sexual: asexual by mitosis and in the sexual it undergo meiosis (involving isogamy, plasmogamy and karyogamy).

\*4\*. How does this unicellular alga described in question 3 carry out its reproduction?

Chlamydomonas exhibit both asexual and a sexual mode of reproduction.

I. Asexual: it undergo mitosis in which the chlamydomonas (parent cell) divide into two forming a daughter cell which is identical to the parent cell having all the features of the parent cell.

II. Sexual reproduction occur due to lack of nutrients. Instead of forming spores it forms gametes.

The chlamydomonas undergo meiosis (reduction phase) in which the parent cell divide to form four daughter cell which is preceded by isogamy (fusion of the opposite mating strain), plasmogamy (fusion of the cytoplasm), and karyogamy (fusion of the nucleus).

\*5\*. Differentiate between the two types of colonial form of algae.

The two colonial form of alga are volvox and pandorina.

PANDORINA

VOLVOX

simple form of colonial alga

complex form of colonial alga

Has sixteen (sixteen ) cells connected by cytoplasmic strands

Has over thousand cell connected by cytoplasmic strand

All cell take part in reproduction

Not all cells take part in reproduction i.e. only the cells(gonidia) found at the posterior end of the colony

Sexual reproduction is anisogamous (pairing by the ends of the flagella)

Sexual reproduction is oogamous (male gamete is motile while female gamete is not)

\*6\*. Describe a named form of complex alga.

The complex form of algae is known as FUCUS.

The focus is a genus of the brown algae which species are often found on rocks in the intertidal zone of the sea shore.

The plant body is dichotomously –branched thallus, flattened with a mid-rib, vegetative apex, reproductive apex at maturity and a multicellular disk with which plant is attached to rock surface. The plant body also have air bladders which is believed to aid the plant to float on water. Various species of focus exist; vary in size from a few centimeter to about 2 meters in

length.

### ```REPRODUCITON```

They also vary in terms of whether the sex cells are found in the same sexual chamber on different bodies.

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

In the male conceptacles, one of the diploid cells outgrowth of the wall of the conceptacles undergo meiosis, the meiotic product undergo many meiotic division to produce antheridium having 64 cells in which each cell develops a biflagellate sperm that swims through the ostioles.

In the female conceptacles, similar to the situation of the main conceptacles, leads to production of an 8 celled oogonium ---each becomes an egg.

Motile sperm in the antheridium move to fertilize the egg, the diploid germinates into a new diploid focus making the dominant generation.