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**ANSWER TO BIO 102 ASSIGNMENT**

1. Eichler classification of plants

<b>DIVISION</b>	<b>CLASS</b>
Thallophyta	Phycotine Mycotine
Bryophyta	Hepaticae Musci
Pteridophyta	Psilotinate Equisetinae Lycopodinae Filicinae
Spermatophyta	Angiosperms Gymnosperms

2. **IMPORTANCE OF ALGAE TO MAN**

- A) Algae serves as source of food for fish which in turn serves as food for man
- B) Algae are used as source of thickening agent for ice cream and shampoo
- C) Certain species of Algae are used for food because of their rich level of protein content
- D) Certain species of Algae are used for cosmetics
- E) Some species of red algae produce agar and carragen which is used to prepare some gels that aid scientific research by serving as a host for growth of certain bacteria, fungi and cell cultures. Agar is also used in d industry to stabilize pie fillings and preserve canned food e.g meat, fish

3. **CHLAMYDOMONAS**

Chlamydomonas is a microscopic unicellular motile form of green algae it possesses two flagellum which it uses for it's locomotion. It also possesses several organelles like the nucleus, the mitochondrion, the pyrenoid, cup shaped chloroplasts and d stigma e.t.c. The nucleus carries the genetic material of the cell, the stigma is used for photoreception, the pyrenoid processes manufactured sugar into starch while the mitochondrion mediate the elaboration of energy molecules

4.

#### REPRODUCTION IN CHLAMYDOMONAS

Chlamydomonas carry out two types of reproduction

- A. **Vegetative reproduction:** in this type of reproduction one parent chlamydomonas loses its flagellum and undergoes mitosis in order to produce two daughter chlamydomonas from one parent with the same amount and quality of genetic make up i.e daughter cells being genetically the same as parent cell.
- B. **Sexual reproduction:** this type of reproduction occurs during unfavorable conditions where by the two haploid daughter cells under go sexual reproduction and form gametes which have two different mating strains which are structurally similar which are positive or negative. These strains fuse together through isogamy to form diploid zygote which has two sets of chromosomes. This zygote den undergoes meiosis two produce four genetically unique haploid cells that later mature. sexual reproduction involves the union of gametes in chlamydomonas clumping of cells occurs in colony under favourable conditions these cells pair by their posterior end. Pairing is isogamous. The cytoplasm of these cells fuse and the flagella is lost. The nuclei fuse and than a zygote is formed. The zygote then secrets thick cell wall (zygospore) and remains dormant in that state for sometime

5.

#### DIFFERENCES BETWEEN PANDORINA AND VOLVOX

<b>PANDORINA</b>	<b>VOLVOX</b>
Has lower number of cells per colony	Has higher number of cells per colony
Sexual reproduction is anisogamous	Sexual reproduction is oogamous
All cells partake in formation of new colonies	Only the gonidia forms new colonies
Cells show lower level of specialization and differentiation	Cells show higher level of specialization and differentiation

6.

#### FUCUS

This is genus of brown algae is normally found on rocks in the intertidal zone of the sea shore. It is flattened and has a dichotomously branched thallus with a mid rib, a vegetative Apex, a reproductive Apex (at maturity), a multicellular disk with which the Algae uses to attach to rock surfaces. The plant also has air bladders which allow the plant to float on water and sexual reproduction is oogamous.