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Assignment.

1) Eichler classified the plant kingdom into two sub-kingdoms. They are Cryptogamae and phanerogamae. The Cryptogams are flowerless and seedless plants. They are simple plants like algae, mosses and ferns which do not produce flowers, fruits and seeds. While phanerogams or phænogams, comprise those plants that produce seeds, hence the alternative name seed plants. They are a subset of the embryophytes or land plants.

2) The Importance of algae to man:

- i) It serves as food for man
- ii) Algae are considered to have high protein content which prevent goitre in man.
- iii) Algae are considered nutritious because of their high protein content and high concentrations of minerals, trace elements and vitamins which are useful for man.
- iv) They are used for making drugs to ward off diseases in the pharmaceutical industry.

4. Algae have been used for centuries, especially Asian countries, for their purported powers to cure or prevent illness e.g. cough, gout, gallstones, goiter, hypertension.

3. Describe a unicellular form of algae;

i) Chlamydomonas is a motile form of green algae. It is found in stagnant water usually along with other forms. The flagella are structure for mobility, the stigma is for photoreception, the nucleus carries the genetic programme of the cell, the mitochondria mediate the elaboration of energy molecules.

4 Chlamydomonas as a unicellular form of algae carry out reproduction by vegetative (asexual) and sexual reproduction.

5 Pandorina

Volvox

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| i. They have similar features with Chlamydomonas. | They show more complex form than Pandorina. |
| ii. They occur in water bloom. | They do not occur in water bloom. |
| iii. Colony consists of 16 cells attached to one another. | They have more cells in the colony. |

6. Fucus is a complex form of algae and is describe as a genus of brown algae.

→ They are found on rocks in the intertidal zones of the sea shores.

→ They have multicellular disk (hold fast) which plant is attached to rock surface.

→ They varies in terms of whether the sex cells are found in same sexual chamber or different sexual chamber.

→ It under goes sexual reproduction.

Sexual Reproduction in Fucus is Oogamous. Sex cell ~~are~~ reproduce in conceptacles which have opening (ostioles) on the surface of the thallus. In the male conceptacles one of the diploid cell from the outgrowth of the wall of the conceptacles undergoes meiosis, the meiotic product undergoes many mitotic divisions to produce antheridium having 64 cells of which each cell develop into flagellate sperm that swims out of the receptacles through the ostiole. While the female conceptacle, only 8 celled oogonium are produced to become an egg.