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BIO102

Assignment.

### Question 1

August Wilhelm Fichler, German botanist who developed one of the first widely used natural systems of plant classification.

He divided the plant kingdom into four divisions:

1) Thallophyta → The algae and fungi

Bryophyta → The liverworts and mosses.

Pteridophyta → The clubmosses, horsetails and ferns.

Spermatophyta → The angiosperms (flowering plants)  
The gymnosperms (pines, spruces, firs)

### Question 2

Importance of Algae to Human :-

1) Mineral Content

2) As a source of food for fishes, livestock and human

3) As a source of vitamins

4) As thickening agents in shampoo industries.

5) Used as fertilizers

### Question 3

Unicellular form of Algae - Chlamydomonas.

Chlamydomonas, genus of biflagellated single-celled green algae (family Chlamydomonadaceae) found in soil, ponds, and ditches. It uses its flagella for movement.

The cells of most chlamydomonas species are more or less oval, a stigma (eyespot), and a usually cupshaped chloroplast. Asexual reproduction is by zoospores.

Sexual reproduction is by formation of gametes.

Manufactured Sugar is processed into starch in Pyrenoid.

### Question 4

Reproduction in Chlamydomonas.

Under favourable conditions, Chlamydomonas reproduces asexually only when the conditions are unfavourable it reproduces sexually.

Asexual Reproduction : The nucleus divides to produce up to sixteen offspring cells within the parent cell wall. Each cell develops flagella and secretes a wall around itself. The cells then secrete an enzyme that breaks down the parent cell wall by which they can escape.

## Sexual Reproduction:-

Whenever, two isogametes of different mating types are collided by chance, they are contacted with each other towards their flagellar ends. Both gametes unite and form a diploid. The zygote soon loses its flagella, develops a thick wall around it and becomes relatively more resistant to unfavourable growth conditions. With the return of favourable ecological conditions, zygote undergoes meiosis and produces four haploid, mobile zoospores, each of which grows into a vegetative cell.

## Question 5

### Difference Between Two Types Of Colonial Algae.

	<u>Pandorina</u>	<u>Volvox</u>
i)	The colony consists of 16 cells	The number of cells in the colony run into thousands.
ii)	Sexual reproduction is anisogamous	Sexual reproduction is Oogamous
	Reproduction is both vegetative and sexual	Reproduction is only sexual

## Question 6

### Complex form of algae : Fucus

It is a genus of brown whose species are often found on rocks in the ~~terrestrial zones~~ 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 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; vary in size from a few centimeters to above two meters in length.

They also vary in terms of whether the sex cells are found in the same sexual chamber or in different sexual chambers on different plant bodies. Sexual reproduction is Oogamous, sex cells are produced in conceptacles which have opening (ostioles) on the surface of the thallus.