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**MHS**

**DENTISTRY**

**19/MHS09/016**

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**BIO 102**

**QUESTION 1**: Classify plants according to Eichler’s grouping of 1883.

**Ans**:

According to Eichler’s grouping plants can be classified broadly into Cryptogamae and Phanerogamae.

* Cryptogamae --plants with concealed/ hidden reproductive organs. They are spore producing, non-floral plants.

1. Division: Thallophyta

* Class: Algae
* Class: Fungi

1. Division: Bryophyta
2. Pteridophyta

* Phanerogamae—plants with visible reproductive organs. They are seed and floral plants.

1. Division: Gynospermae

* Class: Monocotyledonae
* Class: Dicotyledonae

1. Division: Angiospermae

**QUESTION2**: How are algae of importance to man?

**Ans**:

Algae are of so many beneficial uses to man:

1. They are a source of vitamins such as vitamins A, B and E.
2. They can be used as a source of agar which can then be used in several ways such as in the preparation of ice cream, jellies, cosmetic, shaving creams, etc., and so on.
3. They can be used for medicinal purposes.
4. They can be used in the manufacture of iodine as they are very rich in it.
5. They can be used in the manufacture of soaps and alums.
6. They can be used as fodder for hens and milk cattle.
7. They are useful in the agricultural field as they can be used as fertilizers.
8. The can also be used as ornamentals. Eg. Botrydium and Spirogyra.

**QUESTION3**: Describe a unicellular form of algae.

**Ans**:

Unicellular alga function as complete living organisms.

DIATOMS: They have silicified cell walls which forms a pillbox-like shell (frustule) composed of overlapping halves (epitheca and hypotheca) perforated by intricate and delicate patterns. They are the most abundant form of algae in the ocean, although they can be found in fresh water as well. They are commonly divided into two orders in the basis of symmetry and shape: the round non-motile Centrales have radial markings; the elongated Pennales, which move with a gliding motion, have pinnate(featherlike) markings.

**QUESTION4**: How does this unicellular alga described in question3 carry out its reproduction?

**Ans**:

Diatoms carry out their reproduction asexually, usually by cell division to produce two daughter cells by mitosis; each daughter cell receives aone valve and it is reproduced by furrowing. The overlapping shell halves separate, each secretes a (usually) smaller bottom half. Thus, individual diatoms formed from successive bottom halves show a progressive decrease in size with each division. Periodic spore formation serves to restore the diatom line to its original size.

**QUESTION5**: Differentiate between the two types of colonial form of algae.

**Ans:**

|  |  |
| --- | --- |
| PANDORINA | VOLVOX |
| 1. The colony consists of just 16 cells. | There are more cells in the colony which may run into thousands. |
| 1. Each daughter colony is released at the right time to become independent. | The larger cells at the posterior ends are the only ones allowed to divide and form new colonies. |

**QUESTION6:l** Describe a named complex form of alga.

**Ans:**

FUCUS: A genus 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 multi-cellular disk with which plant is attached to rock surface. The plant body has air bladders which helps plant stay afloat on the water. They exist in different species and vary in size from about a few centimeters to two meters of length.