

①

Name: CHAPMAN PAMELA CHUKAMBO

MATRIC NO: 19/MTS01126

DEPARTMENT: MEDICINE AND SURGERY

COURSE: BIOLOGY 102

DATE: 24<sup>th</sup> APRIL, 2020

1. Classify plants according to Huxley's grouping of 1883.

Huxley's classification scheme had four divisions and each had their own classes.

- a. Division one [Thallophyta] ÷ Phycotinae (Algae)  
Mycotinae (Fungi)
- b. Division two [Bryophyta] ÷ Hepaticae (Liverworts)  
Musci (Mosses)
- c. Division three [Pteridophyta] ÷ Psilotinae (Psilotum)  
Lycopodiinae (Selaginella)  
Equisetinae (Horse tail)  
Filicinae (Ferns)
- d. Division four [Spermatophyta] ÷ Gymnospermae (Gymnosperm)  
Angiospermae (Angiosperm)

2. How are algae of importance to man?

Algae serves as food for fish; It is used in fishing, in oxides

P. T. O

(2)

Brown algae is used to make Alginic acid, which is used in icecreams, Syrup among other suspensions and emulsion. Their high iodine content is useful for the prevention of goitre.

3: Describe a unicellular form of algae.

An example of a unicellular and motile green algae is Chlamydomonas. It has a pair of flagella for movement. It is bounded by a cellulose cell wall. In the cell are the spherical contractile vacuole for osmoregulation, cylindrically shaped mitochondria for respiration, starch grains to store starch and pyrenoid gland for conversion of manufactured sugar to starch; it has the eye spot to detect light and chloroplast to aid photosynthesis.

4: How does this unicellular algae described in question three carry out its reproduction.

Chlamydomonas undergoes both sexual and asexual reproduction. In asexual reproduction, the Chlamydomonas loses its flagella. It then undergoes mitotic division and gives rise to the two nuclei, within elaborated cell wall. This delimits the cytoplasm around the nuclei two daughter cells are

P.T.O



(3)

released. In sexual reproduction the cell is usually under unfavourable conditions. The haploid daughter cells do not form spores in this case, they form gametes that have two different mating strains, which although structurally similar are either negative or positive. Fusion of opposite mating strains occurs. This gives a diploid zygote with two sets of chromosomes. After a period of dormancy, meiosis occurs and four haploid daughter cells are produced.

5. Differentiate between the two types of colonial forms of algae.

Pandoria	Volvox
i. It does not have cells differentiated for reproduction.	It has cells differentiated for reproduction.
ii. Sexual reproduction is anisogamous.	Sexual reproduction is oogamous.
iii. It has sixteen daughter cells.	It has numerous daughter cells.

(4)

6. Describe a named complex form of algae.

Fucus is a genus of a brown coloured algae that is often found in rocks in the intertidal zones of sea shores. The body is flattened, and it has dichotomously branched thallus with a mid-rib, a vegetative apex, and a multicellular disc, which is also called a hold fast. The hold fast is useful for securing it to the rock surface. In addition, the plant body has air bladders which help to keep the plant afloat in water. During maturity the vegetative apex becomes the reproductive apex.