

- Synopsis
1. Algae consist of three main groups thallophyte, bryophyte, and pteritophyta
  2. The simple plants with stem and leaves but lack true roots called bryophyta
  3. All algae are classified according to their color.
  4. Usually, movement of algae cells is produced by the action against water with one or more of the protoplasmic extension from one or more
  5. List the nine divisions into which algae are classified; 1. Chlorophyta 2. Euglenophyta 3. Basilinophyta 4. Rhodophyta 5. Cyanophyta 6. Phaeophyta 7. Chrysophyta  
8. Cryptophyta 9. Pyromophyta
  6. The primary classification of algae is based on
    - i) Photosynthetic pigment
    - ii) Nature of food
    - iii) Nature of cell wall component
    - iv) Types of flagella
    - v) Details of cell structure
  7. The three main photosynthetic pigments in algal divisions
    - i) Chlorophyll
    - ii) Carotenoid
    - iii) Biloprotein
  8. What kind of food storage products are found in the following algal divisions
    - i) Chlorophyta — starch
    - ii) Rhodophyta — Floridean starch
    - iii) Cyanophyta — Myxophyccean starch
    - iv) Phaeophyta — laminarin (mannose starch)
    - v) Euglenophyta — paramylum starch.
  9. List the material constituents of the walls of an algae
    - i) Cellulose
    - ii) Lipid
    - iii) Organic acid
    - iv) Poly organic acid
    - v) Protein material
    - vi) Peptic/
  10. Flagella and zoospores are found in all groups of algae except cyanophyte and rhodophyte
  11. What pattern is shown by the fibrils of flagella 9 + 2 pattern
  12. The outer extension that bounds flagella is referred to as plasma lamina
  13. Vegetative reproduction in algae usually takes place by fragmentation.
  14. The short segments from the end of the algal filaments formed when the wall between the cells split or when the cells between dies are called hormogonia.
  15. The term ... is commonly used to refer to any motile cell formed when a vegetative cell reproduces and it is unknown if it is gamete or zoospore. Schwam
  16. Produce the special names given to the following under the study of an alga.
    - i) Motile unicells zoospores
    - ii) Non motile asexual spores aplanospore

- iii) Identical spores that are miniature to the parent cell autospore  
iv) New individual that acquires a thick cell wall around them hypospores.
17. What are the sporangia that are recognized in the division phaeophyta  
i) Plurilocular - 200 spores and gametes  
ii) Unilocular - 20 spores
18. Name the type of sexual reproduction listed below  
i) Only one gamete (sperm) is flagellated and it fuses with a larger non flagellated gamete (egg) oogamy  
ii) Both pair of gametes are flagellated and are similar in type isogamy  
iii) Both gametes are flagellated but are dissimilar in size ... Anisogamy
19. What is likely to be formed when the current of the zygote divide upon germination?  
Zoospores
20. The sequence of phases passed by an algae during growth is termed life history and it consists of two aspects namely; morphological and cytological
21. The blue-green pigments found in the primitive algae is characterized by the presence of phycocyanin and chlorophyll
22. In the prokaryotic, there is no definite nucleus any ..... plastids and the protoplast is differentiated into a peripheral colored zone called chromoplasms and an inner colorless portion called central body
23. List the compounds that are likely to be found in the cell wall of a prokaryote  
i) Cellulose  
ii) Peptic compound  
iii) Glycogen
24. The thick walled cells formed after a period of active growth that survive in the dormant stage when conditions are unfavorable are termed ... akinetes
25. The enlarged vegetative cells with transparent contents and a thickened walls present in the filamentous prokaryotes is known as heterocyst
26. What is the main function of the vegetative cells you stated above (0.25)?  
They are specialized cells for nitrogen fixation.
27. What is the main differences between the above stated structure (0.25) and a normal vegetative  
Heterocysts are much larger than vegetative cells.
28. What accounted for the light yellow vegetative structure you stated above (0.25)?  
the absence of biliproteins / phycobilins
29. What are the forms in which eukaryotes can exist?  
i) Unicellular  
ii) Multicellular  
iii) Coenocytic
30. The chloroplast of the eukaryotes contain a special protein structure called pyrenoid surrounded by a Starchy envelop

31. In eukaryotic sexual reproduction, species are said to be homothallic when the pairing gametes are from the same gametes and heterothallic when the pairing gametes are from separate gametes.

32. In green algae, gametes that grows parthenogene without the fusion of the male and the female gametes are termed parthenospores or Azygospores.

33. These gametes (0.32) when produced in Spirogyra <sup>was no</sup> cilia or flagellum, hence are called Algal gamete.

34. List the order of origin and the evolution of sexuality in the chlorophyta  
Vegetative  $\rightarrow$  asexual  $\rightarrow$  sexual

35. Under what conditions are the following modes of reproduction exhibited in the chlorophyta?  
i) Sexual reproduction <sup>most approaches end up to life, (unfavorable and favorable)</sup>  
ii) Asexual reproduction <sup>unfavorable condition (favorable condition)</sup>

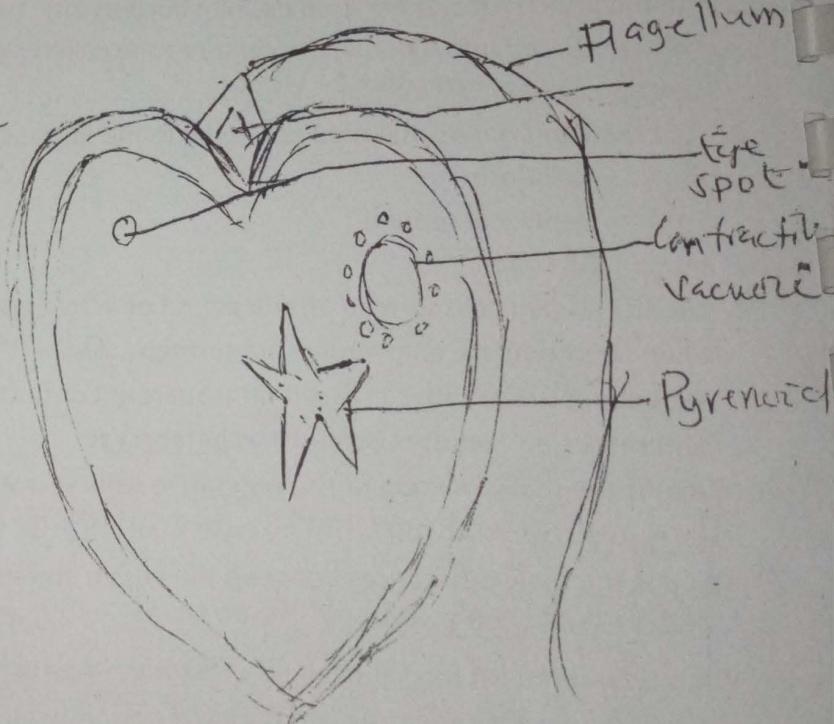
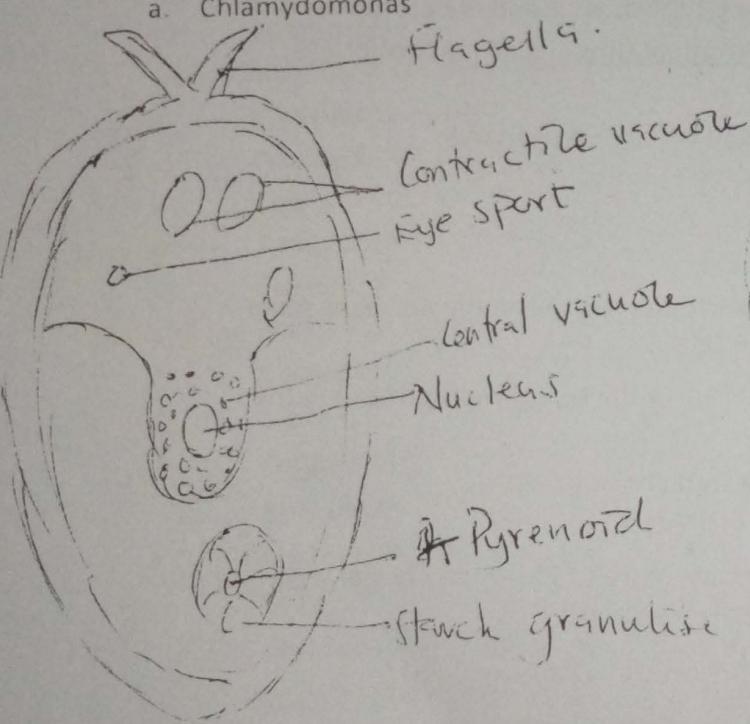
36. List ten examples of the members of the chlorophyta.

1. Spirogyra
2. Chlamydomonas
3. Ulothrix
4. Oedogonium
5. Vaucheria
6. Chara
7. Zygnema
8. Pandorina
9. Endocarpia
10. Caulerpa

37. Draw and label the following organisms at the spaces provided.

a. Chlamydomonas

b. euglena



38. List the kind of division which the following chlorophyll are found

- i) Chlorophyll a. all algae
- ii) Chlorophyll b. chlorophyta/euglenophyta
- iii) Chlorophyll c. bacillanophyta, cryptophyta, chrysophyta, phaeophyta
- iv) Chlorophyll d. rhodophyta

