

0Q: Define the following

Haplontic or zygotic life cycle	Aplanospore	Diplontic life cycle
Acronematic flagellum	Planktonic algae	Sublittoral algae
Obligate mixotrophic algae	Gas vesicles	Akinetes
Obligate phototrophic algae	Coenobium	gliding movement
Pleuronematic flagella	Pyrenoid	Lorica
Macrandrous	Prokaryotic algae	

Q: Match the following words from column A with the most appropriate word from column B.

Column A	Column B
1- <i>Ulothrix</i>	----- Siphonous
2- <i>Volva</i>	----- Branched filament
3- <i>Cladophora</i>	----- Mixotrophic obligate algae
4- <i>Dinobryon</i>	----- Daughter colony
5- <i>Ulva</i>	----- Cap cell
6- <i>Chlorella</i>	----- Lorica
7- <i>Euglena gracilis</i>	----- Parenchymatous construction thalli
8- <i>Vaucheria</i>	----- Girdle shaped chloroplast
9- <i>Oedogonium</i>	----- Autospores
10- <i>Chlamydomonas</i>	----- Unicellular flagellate cell

Q: Match the following words from column A with the most appropriate word from column B.

Column A	Column B
1- Coenobium	----- Stigeoclonium
2- Heterocyst	----- <i>Cladophora</i>
3- Hormogonia	----- <i>Pediastrum</i>
4- Closed mitosis	----- <i>Chlorella</i>
5- Open mitosis	----- <i>Oscillatoria</i>
6- Heterotrichous	----- Nostochales
7- Prokaryotic	----- Charophyceae
8- Autospores	----- Phaeophyceae
9- Alginic acid	----- Cyanophyceae
10- Branched filament	----- Chlorophyceae

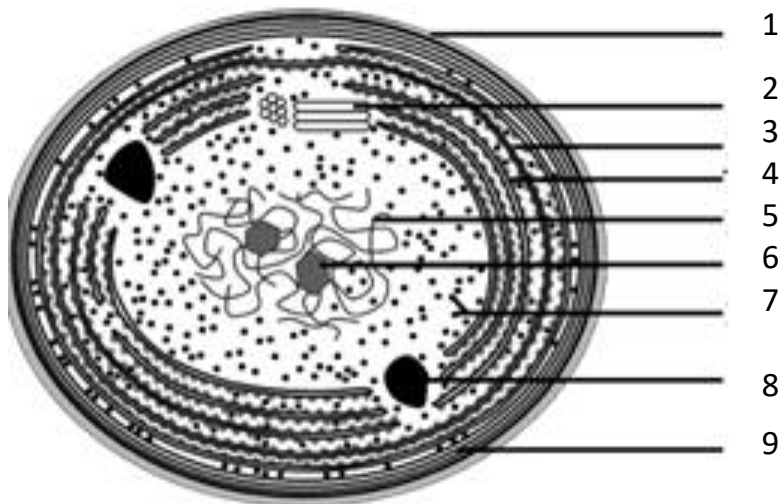
Q: Match the following words from column A with the most appropriate word from column B.

Column A		Column B
1- <i>Tetraspora</i>	-----	Hormogonia
2- <i>Synura</i>	-----	Statospore
3- <i>Cladophora</i>	-----	Colonies with direct cellular contact
4- <i>Euglena</i>	-----	Androsporangia
5- <i>Stigeoclonium</i>	-----	Produced Macrozoospores & Microzoospores
6- <i>Volvox</i>	-----	Heterotrichous
7- <i>Ochromonas</i>	-----	Branched filament
8- <i>Ulothrix</i>	-----	Palmolloid aggregation
9- <i>Oscillatoria</i>	-----	Longitudinal cell division
10- <i>Oedogonium</i>	-----	Gonidia

Q: Write about type of flagella in details.

Q: Write about closed mitosis and open mitosis in Chlorophyceae.

Q: Labeling the drawing below which shows structures of typical blue green algal cells.



Q: Write the two adaptations of heterocysts to perform Nitrogen fixation.

Q: On the basis of nutritional strategies, algae are classified into four groups, explain them in details.

Q: Draw and label a semi diagrammatic of a light and electron microscopical view of the basic organization of a cell of the Chrysophyceae.

Q: Write about the process of cell division in *Oedogonium* with drawing.

Q: Draw and label the developmental stage in *Nucul*.

Q: Write about Statospore formation in *Ochromonas* with drawing.

Q: Fill the blanks below with suitable word.

- 1- The structural part of the cell wall in Cyanophyta consist of -----
- 2- When two flagella differ in length and surface features one bearing hair and the other smooth they are termed -----
- 3- In unicellular algae cell division may be longitudinal as in -----
- 4- In blue green algal cells there are the thylakoids are the site not only for photosynthesis but also for -----
- 5- Planktonic cyanophytes in eutrophic lake form blooms floating with buoyancy provided by -----
- 6- In chlorophyte cell walls usually have ----- as the main structural polysaccharide.
- 7- In *Chlamydomonas* when gametes of plus strain are mixed with those of a minus strain the flagella of the opposite strain adhere because of the -----.
- 8- In open mitosis, spindle persist as a ----- with microtubules perpendicular to the plain of cell division.
- 9- Much of the volume of the *Chlamydomonas* cell is filled by large chloroplast in the shape of thick -----.
- 10- Planktonic Cyanophytes including species of *Anabaena*, *Gloeotrichia*, *Microcystis* have gas vacuoles for providing -----.
- 11- Thick walled aplanospores are called ----- which form in adverse condition.
- 12- Eye spot can be easily seen in the light microscope because of the huge accumulation of -----

- 13- Most of the ----- are sensitive to changes in the environment and survive the unfavorable period as statospores.
- 14- In heterokontophyta, the chloroplast is enclosed notably it is own double membrane, but also by -----.
- 15-The principal accessory pigment is ----- in the classes Chrysophyceae, Bacillriophyceae, Phaeophyceae and some Raphidiophyceae.
- 16- *Gloeotrichia* and certain species of *Tolypothrix* and *Calothrix* gas vesicles appear only in -----
- 17- Nitrogenase the enzyme that catalysis the reduction of N^2 to NH_4 is sensitive to ----- and poisoned by it.
- 18- In Chlorophyta the flagella are of ----- type.
- 19- In the green algae, the ----- is one major site of starch formation.
- 20- In closed mitosis the microtubules of the spindle are reorganized to -----.
- 21- ----- can be distinguished from vegetative cells by their hyaline yellowish protoplast and absence of granular reserve material and gas vacuoles.
- 22- ----- consist of three subunit a basal section, a tubular shaft and one or two terminal hairs.
- 23- In heterokontophyta, within chloroplasts, the thylakoids are grouped into -----.
- 24- The silica scales of Chrysophyceae are produced inside a silica deposition vesicles that derived from -----.
- 25- In the classes Xanthophyceae and Eustigmatophyceae the principle accessory pigment is -----

Q Choose the correct answer for the statements below:

- 1- When benthic algae grow attached to mud called -----
 a) Epiphytic b) Epipellic c) planktonic d) Epizoic
- 2- The reserve polysaccharide in Cyanophyta is -----
 a) Cyanophcean starch b) Laminarian c) Floridean starch d) Carageenan

- 3- In Cyanophyta thylakoids found distributed in cytoplasm and -----
 a) stacked in twos b) stacked in threes c) not stacked d) stacked in fours
- 4- ----- are aflagellate spore that can develop into zoospores.
 a) Endospore b) Autospores c) Aplanospores d) Exospores
- 5- Flagellated cells are characterized by presence of a ring of flagella at the anterior end
 a) *Volvox* b) *Ulothrix* c) *Oedogonium* d) *Pediastrum*
- 6- In sexual reproduction when both combined gametes are motile but one is small and the other is large they are called -----
 a) An Isogamy b) parthenogenesis c) isogamy d) oogamy
- 7- In chlorophyte during cytokinesis new cell wall produced by cell plate formation by vesicles from -----
 a) Endoplasmic reticulum b) Golgy body c) Plasmalema d) Mitochondria
- 8- ----- have Pseudoparenchymatous thalli
 a) Nematium b) *Ulva* c) Tetraspora d) *Gloeotrichia*
- 9- *Fucus* have ----- life cycle.
 a) Diplontic b) Diplohaplontic c) Haplontic d) all three answers
- 10- In Cyanophyta, phycobilisomes lie in rows on the outer surfaces of the -----.
 a) Golgy bodies b) Thylakoids c) Mitochondria d) Endoplasmic reticulum
- 11- When benthic algae living or grow attached to rocks called -----
 a) Epilithic b) Epipellic c) Epizoic d) Epiphytic
- 12- Phycocyanin Allophycocyanin and Phycoerythrine are lies in hemidiscoidal bodies called -----
 a) Carboxysomes b) Phycobilisomes c) Lysosome d) parabasal bodies
- 13- When terrestrial or sub aerial algae re living on the under surface of translucent stones embedded in soil called -----
 a) Cryptoendolithic b) Chasmolithic c) Sublithic d) Symbiotic
- 14- Flagellate motile cell in algae may be quadriflagellate as in -----
 a) *Volvox* b) *Ulothrix* c) *Chlorella* d) *Oedogonium*
- 15- Both ----- have delicate scales on the surface of their flagella
 a) Prasinophytes & Charophytes b) Chlorophytes & Charaophytes c) Prasinophytes & Chlorophytes d) Cyanophytes & Chlorophytes

16- Cytoskeleton of flagella of Charophyceae have ----- roots of microtubules.

- a) two b) Four c) Three d) one

17- *Chlamydomonas* have ----- life cycle.

- a) Diplontic b) Diplohaplontic c) Haplontic d) all three answers

18- In parenchymatous construction of algae cell division occur -----

- a) apical b) intercalary c) in three dimension d) subapical

19- Under electron microscope flagellum consist of a peripheral cylinder of -----
doublet fibril surrounding a central pair of singlet.

- a) Ten b) Eight c) Nine d) Two

20- In *Chara* both of the main axis and lateral axis grow by means of a dome shaped ----.

- a) Intercalary cell b) apical cell c) basal cell d) intermodal cell