

Topic :- Plant Kingdom

- 1 **(a)**
The members of Myxophyceae or Cyanophyceae are commonly known as blue-green algae due to the presence of blue-green pigment –phycocyanin, *c* – phycoerythrin alongwith chlorophyll –*a*, β – carotene and myxoxanthin.
- 2 **(c)**
In *Pinus*, the microspore nucleus divides by a periclinal wall and forms a very small prothallial cell and large central cell. The central cell cuts off a second prothallial cell and antheridial cell. The nucleus of the antheridial cell divides to form generative cell and tube cell. Thus, the pollen grain of *Pinus* is shedded at four-celled stage when it consists of two vegetative prothallial cells, a generative cell and a tube cell.
- 3 **(c)**
Class-Phaeophyceae includes brown algae. Brown algae are marine plants. Chief pigments found in the members of this class are chlorophyll –*a* and *c*, β – carotene, violaxanthin, fucoxanthin, lutein and diatoxanthin. Reserve food is laminarian, mannitol and oils.
- 4 **(a)**
Haploid spore germinates to form a prothallus (gametophyte), which is monoecious, *i.e.*, has both antheridia (σ) and archegonia (ρ)
- 5 **(d)**
Gymnosperms include medium sized trees or tall trees and shrubs. One of gymnosperms, the gaint red wood tree *Sequoia* is one of the tallest trees species
- 6 **(b)**
The spores are homosporous and germinate to produce independent cushion-like monocious gametophyte
- 7 **(a)**
A- *Marchentia* (male thallus)
B- *Marchentia* (female thallus)
C- *Funaria*
D- *Sphagnum*
- 8 **(a)**
Pollen grains.
Male sex organ is stamen also known as androecium. It consists of an anther lobe and a filament.
Anther produces pollen grains

- 9 **(d)**
The only positive evidence of aquatic ancestry of bryophyte is ciliated sperms. Each sperm usually consists of minute, slender, spirally curved body furnished with two long, terminal whiplash type flagella
- 10 **(c)**
Heart-shaped prothallus is a gametophytic stage of fern. It contains male and female reproductive organs, so it is a monoecious structure.
- 11 **(d)**
Heterocysts are specialized cells found in blue-green algae like
Nostoc, Anabaenopsis, Anabaena, Rivularia,
Aulosira, Scytonema, etc.
- 12 **(c)**
Chemotaxonomy.
Numerical taxonomy which is now easily carried out using computers is based on all observable characteristics. Number and codes are assigned to all the characters and the data is then processed. In this way each character is given equal importance and at the same time hundreds of characters can be considered
- 13 **(a)**
The vegetative plant body of *Marchantia* is a dorsiventral lobed thallus. It is dichotomously branched. The upper surface is smooth whereas the lower surface bears a large number of unicellular rhizoids, which penetrate into the soil
- 14 **(a)**
Study of algae is known as **Phycology** while study of fungi is known as **Mycology**.
- 15 **(d)**
All statements are correct.
Sexual reproduction in bryophytes is oogamous type. The gametes are produced in complex, multicellular jacketed sex organs. The male reproductive organs are antheridia and female reproductive organs are archegonia.
The haploid gametophyte is dominant, long-lived, green and independent whereas the diploid sporophyte is short lived and dependent upon the gametophyte
- 16 **(d)**
The blue-green algae are prokaryotic and unicelled to filamentous. They have the chief photosynthetic pigments as chlorophyll $-a$, β – carotene, myxoxanthin, lutein, c – phycocyanin, c – phycoerythrin and allophycocyanin.
- 17 **(d)**
Structural embryology, phytochemistry, anatomy.
Natural system of classification was developed by George Bentham and Joseph Dalton Hooker based on natural affinities among the organism. It was based on both external and internal features like phytochemistry, anatomy, ultra-structure, embryology
- 18 **(c)**

Dawsonia is the largest bryophyte (moss), which grows up to 70 cm. It is found in New Zealand and Australia.

19 **(d)**

Dryopteris, *Pteris* and *Adiantum* belong to class-Pteropsida of the division - Pteridophyta

20 **(b)**

Cycas revoluta is popularly known as **sago palm**. Sago (sabodana) is a starch obtained from stems and seeds of various species of cycads.

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	A	C	C	A	D	B	A	A	D	C
Q.	11	12	13	14	15	16	17	18	19	20
A.	D	C	A	A	D	D	D	C	D	B