

Topic :- Plant Kingdom

- 1 **(b)**
In ferns about 32 multiflagellate, spirally coiled sperms are produced in antheridium. These sperms swim towards open archegonia due to the presence of malic acid in the later, *i.e.*, they show chemotaxy.
- 2 **(b)**
Pinus is monoecious, which bear male cone as well as female cone on the same tree at separate branches.
Marchantia, *Cycas* and papaya are dioecious plants.
- 3 **(d)**
Endosperm in a gymnospermic plant is a haploid structure, which is formed without fusion of gametes and represent female gametophyte. Leaf of gymnosperm belongs to diploid generation.
 $2n = 16, n = 8.$
So, number of chromosomes in endosperm of gymnosperm will be 8.
- 4 **(b)**
The green algae *Cephaleuros virescens* causes red rust of tea, thus, destroying the tea leaves. Similar disease is caused by the species of *Cephaleuros* to coffee plant, piper and *Citrus* species.
- 5 **(b)**
Blue-green algae or cyanobacteria have prokaryotic organization. There is no true nucleus and membrane bound cells organelles like mitochondria, chloroplasts, ER, Golgi body, etc, in prokaryotic cell. The DNA of prokaryotic cells lack histone proteins.
- 6 **(a)**
Pollination occurs once a genetically compatible pollen grain lands directly on the ovule. The pollen grain germinate and grows into the ovule, penetrating the female gametophyte and eventually fertilising an egg nucleus
- 7 **(c)**
The sporophyte of *Funaria* consists of a foot, a long slender seta and a capsule. The capsule wall is several layers thick and is highly differentiated. The outermost layer is the epidermis which contains numerous stomata in the apophysis region, fewer in the theca region and none in the opercular region.

- 8 **(b)**
Bacillariophyceae - Golden brown algae (diatoms)
Chlorophyceae - Green algae
Xanthophyceae - Yellow-green algae
Phaeophyceae - Brown algae.
- 9 **(a)**
Gametophyte is gamete bearing, haploid multicelled stage of many plants, beginning with haploid spores and ending at fertilisation
- 10 **(b)**
A-*Selaginella*, B-*Equisetum*, C-Fern, D-*Salvinia*
- 11 **(b)**
Pollen grain from anther after dispersal reaches to the stigma of ovary with the help of various agents like wind, air, insects. This process is known as pollination
- 12 **(a)**
Ephedra (gymnosperm) is a bushy trailing shrub. Drug ephedrine is obtained from *Ephedra*. This drug is used in curing respiratory ailments including asthma.
- 13 **(d)**
In *Spirogyra*, sexual reproduction occurs through conjugation resulting into the formation of zygospore, while in *Funaria*, *Pteris* and *Cycas* zooidogamous oogamy occurs.
- 14 **(a)**
A-*Funaria*-Moss; B-*Sphagnum*-Moss
- 15 **(b)**
The smallest flowering plant in the plant kingdom is aquatic. It is *Wolffia*, commonly known as water meal or duck weed
- 17 **(c)**
Funari, *Polytrichum* and *Sphagnum* are the examples of mosses
- 18 **(d)**
The pollen sac in *Cycas* is called **microsporangium**. Each mature microsporangium is an oval body attached by a short stalk at one end. It produces a large number of microspores (pollen grains).
- 19 **(a)**
The apophysis of moss **capsule** contains chloroplast bearing parenchymatous cells, called as chlorenchyma. Due to presence of chloroplasts, chlorenchyma cells have the ability to prepare food by the process of photosynthesis.
- 20 **(c)**
Bryophytes are dependent on water for reproduction, because sperms must swim to the archegonia. They are partly adapted to the land, because the gametes develop in protective structures, *i.e.*, antheridia and archegonia. So, bryophytes are also called 'amphibians of the plant kingdom'

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

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