

**Topic :- Plant Kingdom**

- 1 **(a)**  
Phylogenetic system of classification was given by Engler and Pranti based on evolutionary relationship of organism. It is also known as Hutchinson's system
- 2 **(c)**  
**Cyanobacteria** (blue-green algae) were first photosynthetic organisms. They contain photosynthetic lamellae equivalent to thylakoids hence, these are autotrophic.
- 3 **(d)**  
In bryophytes, the most conspicuous phase in life cycle is the gametophyte. It is independent and concerned with reproduction. In *Sphagnum*, male and female gametophytes are independent and free living.
- 4 **(a)**  
*Chlamydomonas*, *Volvox*, *Ulothrix*, *Spirogyra* and *Chara* are the examples of class-Chlorophyceae
- 5 **(d)**  
Agar is obtained from *Gelidium*, *Gracilaria*, *Chondrus*, *Ceramium*, etc., and used in microbiological works to solidify culture media. Green unicellular algae such as *Chlorella* and *Chlamydomonas* are used in sewage disposal ponds. They remove CO<sub>2</sub> and restore O<sub>2</sub> by the process of photosynthesis and make the sewage water enuitable for many fishes and aerobic bacteria. *Porphyra* *Laminaria* and *Sargassum* are used as food
- 6 **(b)**  
The multicellular female gametophyte is retained with in megasporangium
- 7 **(c)**  
*Anthoceros* belongs to class-Anthocerotopsida of division-Bryophyta.
- 8 **(d)**  
From the pith of *Cycas revoluta* sago (starch) is obtained, while the seeds of *Cycas rumphi* and shoots of *Cycas pectivaler* and *Cycas circinalis* are cooked and eaten as a source of starch by tribals in India. Some species of *Cycas* are grown as ornamental plants.
- 9 **(b)**  
Endosperm in angiosperms develops as a fusion product of secondary nucleus with male gamete. Secondary nucleus is diploid structure formed by fusion of haploid chalazal polar nucleus and haploid micropylar polar nucleus. Zygote is formed by the fusion of male gamete with egg
- 10 **(c)**

The microsporophyll is a brown coloured triangular structure consisting of a short stalk or filament and leaf like flattened structure or 'anther'. Each sporophyll is provided with two microsporangia on its abaxial surface.

- 11 **(c)**  
*Chlorella* is used for purifying air in space ships.
- 12 **(d)**  
Pteridophytes are called vascular cryptogams, also known as seedless vascular plants. They produce spores rather than seeds. These include horse tails and ferns
- 13 **(a)**  
Pyrenoids are centrally placed protein bodies surrounded by starch sheath, which are present in chloroplast in the leaves of *Funaria*.
- 14 **(c)**  
Bryophytes mostly occur in humid damp and shaded localities. The bryophytes are widely distributed throughout the world, especially in moist mountain forests of tropics, sub-tropics and Antarctic regions
- 15 **(a)**  
The unicelled microspore of *Pinus* undergoes three divisions of microgametogenesis, so as to form a four celled pollen grains or male gametophyte. There are two prothallial cells, a generative cell and a tube cell.
- 16 **(b)**  
A-Capsule, B-Seta, C-Sporophyte, D-Gametphyte
- 17 **(d)**  
Member of Chlorophyceae are unicellular, colonial or filamentous have definite chloroplast commonly known as green algae
- 18 **(b)**  
Corolloid root is developed in *Cycas*. It contain an algae zone in the cortex. This algal zone contains blue-green algae (cyanobacteria) like *Nostoc*, *Anabaena*, which grow in symbiotic association with corolloid root
- 19 **(c)**  
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
- 20 **(a)**  
The major difference between angiosperms and gymnosperms is found on the seed. This is where angiosperm seeds are coated with in the fruits. While on the other hand, gymnosperm seeds are exposed

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

**PE**