DIRECTORATE OF GOVERNMENT EXAMINATION CHENNAI-600 006

HIGHER SECONDARY FIRST YEAR EXAMINATION – MARCH/APRIL 2023

PART – I BIO-BOTANY KEY ANSWER

Maximum Marks : 35

Note :

1. Answer written only in **BLUE** or **BLACK** should be evaluated.
2. Use Pencil to draw diagram.
3. In Section-1, choose the correct answer and write the option code with corresponding answer.

Section – 1

Answer all the Questions. **8×1=8**

Q. No	Option	TYPE –A	Q. No	Option	TYPE –B	Marks
1	(c)	Movement of Chromosomes towards Pole	1	(a)	Serotaxonomy	1
2	(a)	Bacteria – Crown gall	2	(b) (or) (d)	Phellem (or) Phellogen	1
3	(b)	Influx of K^+	3	(d)	Potato, Tomato, Cotton	1
4	(a)	400 to 700 nm	4	(b)	Influx of K^+	1
5	(a)	Serotaxonomy	5	(c)	Movement of Chromosomes towards Pole	1
6	(d)	Potato, Tomato, Cotton	6	(a)	Bacteria – Crown gall	1
7	(b) (or) (d)	Phellem (or) Phellogen	7	(d)	Foliar bud, Cauline bud	1
8	(d)	Foliar bud, Cauline bud	8	(a)	400 to 700 nm	1

<table>
<tr><td colspan="3">SECTION – 2
Answer any four questions.</td><td colspan="2">4×2 = 8</td></tr>
<tr><td>9.</td><td colspan="2">1. Xylem plates alternates with phloem plates
2. Example : Lycopodium clavatum</td><td>1
1</td><td>2</td></tr>
<tr><td>10.</td><td>Aggregate Fruit</td><td>Multiple Fruit</td><td rowspan="2">2</td><td rowspan="2">2</td></tr>
<tr><td></td><td>It develops from a single flower having an apocarpous pistil.</td><td>It develops from the whole inflorescence along with its peduncle.</td></tr>
<tr><td>11.</td><td colspan="2">1. It provides two dimensional images.
2. The magnification is 1-3 lakhs times.
3. The resolving power is 2-10 A^{O}
4. It is used for studying the detailed structure of viruses, mycoplasma and cellular organelles.
(Any two)</td><td>2</td><td>2</td></tr>
<tr><td>12.</td><td colspan="2"><table><tr><th>Enzyme</th><th>Source</th><th>Uses</th></tr><tr><td>Bacterial protease</td><td>Bacillus</td><td>Biological detergents</td></tr><tr><td>Bacterial glucose isomerase</td><td>Bacillus</td><td>Fructose Syrup manufacture</td></tr><tr><td>Fungal lactase</td><td>Kluyveromyces</td><td>Breaking down of lactose to glucose and galactose</td></tr><tr><td>Amylases</td><td>Aspergillus</td><td>Removal of Starch in woven cloth production</td></tr></table>(Any two)</td><td>2</td><td>2</td></tr>
<tr><td>13.</td><td colspan="2"><table><tr><th>Porous wood</th><th>Non Porous wood</th></tr><tr><td>Common in Angiosperms</td><td>Common in Gymnosperms</td></tr><tr><td>Porous because it contain vessels</td><td>Non –porous because it does not contain vessels</td></tr><tr><td>Example : Morus</td><td>Example : Pinus</td></tr></table>(Any two)</td><td>2</td><td>2</td></tr>
<tr><td>14.</td><td colspan="2">Nitrogen is present in the atmosphere in gaseous form. Plants cannot use N_2 in gaseous form. It can be absorbed in the form of Nitrate.</td><td>2</td><td>2</td></tr>
</table>

	SECTION – 3 **Answer any three questions. Question No. 19 is Compulsory.**	**3x3=9**	
15.	**Merits of Five kingdom classification :** • The classification is based on the complexity of cell structure and organization of thallus • It is basesd on the mode of nutrition • Separation of fungi from plants • It shows the phylogeny of the organisms **(Any two)** **Demerits :** • The kingdom monera and protista accommodate both autotropic and hetertrophic organisms, cell wall bearing organisms thus making these two groups more heterogeneous • Viruses were not included in the system **(Any one)**	2 1	3
16.	**Nepenthes :** Pitcher is a modified leaf contains digestive enzymes. Rim of the pitcher is provided with nectar glands and acts as an attractive lid. When insect is trapped, proteolytic enzymes will digest the insect.	3	3
17.	1. Diagram of Stomata 2. Any two parts	2 1	3
18.	Death of the plant or plant part consequent to senescence. The proteolytic enzymes involving PCD in plants are phytaspases	3	3
19.	1. It was first observed by Flemming. 2. It occur in Acetabularia alga and in oocytes of Salamandar 3. Condensed Chromosome forms the Chromosomal axis. 4. From which lateral loops of DNA extend. 5. RNA Synthesis takes place **(Any two points)** Lamp brush chromosome diagram, any two parts	 2 1	3

<table>
<tr><td colspan="3">SECTION – 4
Answer all questions.</td><td colspan="2">2×5=10</td></tr>
<tr><td>20
(a)</td><td colspan="2">Floral Characters of Clitoria ternatea
1. Inflorescence
2. Flower
3. Calyx
4. Corolla
5. Androecium
6. Gynoecium
7. Fruit and Seed
(Explanation of any three)
Floral Diagram
Floral Formula</td><td>

3
1
1</td><td>

5</td></tr>
<tr><td colspan="5">(OR)</td></tr>
<tr><td>20
(b)</td><td colspan="2">Economic Importance of Fungi
1. Food
2. Medicine
3. Production of Organic Acids
4. Bakery and Brewery
5. Production of enzymes
6. Agriculture
7. Harmful activities
(Any five uses with one Example)</td><td>5</td><td>5</td></tr>
<tr><td>21
(a)</td><td colspan="2">Difference between Anatomy of Dicot root and Monocot root
<table><tr><th>Dicot root</th><th>Monocot root</th></tr><tr><td>Pericycle Give rise to lateral roots , phellogen and a part of vascular cambium</td><td>Gives rise to lateral roots only</td></tr><tr><td>Limited number of xylem and phloem strips</td><td>More number of xylem and phloem strips</td></tr><tr><td>Conjunctive tissue parenchymatous</td><td>Mostly sclerenchymatous. Sometimes parenchymatous</td></tr><tr><td>Cambium appears as a secondary meristem</td><td>Cambium is absent</td></tr><tr><td>Xylem usually tetrach</td><td>Usually polyarch xylem</td></tr></table></td><td>5</td><td>5</td></tr>
<tr><td colspan="5">(OR)</td></tr>
<tr><td>21
(b)</td><td colspan="2">Structure of Ganong’s potometer
Explanation of the structure of Ganong’s potometer

Diagram

Any Two Parts</td><td>3

1

1</td><td>5</td></tr>
</table>