

DIRECTORATE OF GOVERNMENT EXAMINATIONS CHENNAI 600 006
HIGHER SECONDARY FIRST YEAR EXAMINATION - MAY-2022
BIO-BOTANY -ANSWER KEY

Instructions : Use BLUE or BLACK ink to write and underline and pencil to draw diagrams. Marks: 35

SECTION -1

(8x1=8)

Note : (1) Answer all the questions. (2) Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer.					
Q. NO	Options	A Type	Q. NO	Options	B Type
1	(a)	While lipids can rarely flip – flop proteins cannot	1	(d)	(II) and (iii) only
2	(a)	Denitrification	2	(a)	(I) and (iii) only
3	(c)	Methanobacterium	3	(a)	Denitrification
4	(b) (or) (c)	Mn prevents the uptake of Fe Mg but not Ca Prevents the update of Fe,Mg,and Ca.	4	(a)	While lipids can rarely flip – flop proteins cannot
5	(c)	Amphoteric	5	(c)	G ₀ phase
6	(c)	G ₀ phase	6	(c)	Amphoteric
7	(d)	(II) and (iii) only	7	(c)	Methanobacterium
8	(a)	(I) and (iii) only	8	(b) (or) (c)	Mn prevents the uptake of Fe Mg but not Ca Prevents the update of Fe,Mg,and Ca.

SECTION - 2

(4 X 2 = 8)

Note : Answer any four questions.		Marks	Total Marks
9	Virion is an intact infective virus particle which is non – replicating outside a host cell		2
10	1 it provides support and bears leaves flowers and fruits 2 it transports water and mineral nutrients to other parts from the root 3 it transports food prepared by leaves to other parts of the plant body		2

11	Open Vascular bundle diagram labelled the parts		2
12	telocentric acrocentric sub metacentric metacentric.		2
13	1 solute concentration or solute potential 2 Pressure potential		2
14	Suppression of growth in lateral bud by apical bud due to auxin produced by apical bud is termed as apical dominance		2

SECTION - 3

(3 X 3 = 9)

Answer any three questions. Question No. 19 is Compulsory.		Marks	Total Marks														
15	<ol style="list-style-type: none"> Helps to derive nutrition in Monotropa, a saprophytic angiosperm Improves the availability of minerals and water to the plants Provides drought resistance to the Plants Protects roots of higher plants from the attack of plant pathogens 		3														
16	Types of classification: <ol style="list-style-type: none"> Artificial Classification Natural Classification Phylogenetic classification 		3														
17	Epidermal Tissue (Any Three Functions)		3														
18	<table border="1"> <thead> <tr> <th>Sap Wood (Alburnum)</th> <th>Heart Wood (Duramen)</th> </tr> </thead> <tbody> <tr> <td>Living part of the wood</td> <td>Dead part of the wood</td> </tr> <tr> <td>It is situated on the outer side of wood</td> <td>It is situated on the centre side of wood</td> </tr> <tr> <td>It is pale coloured</td> <td>It is dark coloured</td> </tr> <tr> <td>Very soft in nature</td> <td>Hard in nature</td> </tr> <tr> <td>Tyloses are absent</td> <td>Tyloses are present</td> </tr> <tr> <td>It is not durable and not resistant to microorganisms</td> <td>It is more durable and resists to microorganisms</td> </tr> </tbody> </table>	Sap Wood (Alburnum)	Heart Wood (Duramen)	Living part of the wood	Dead part of the wood	It is situated on the outer side of wood	It is situated on the centre side of wood	It is pale coloured	It is dark coloured	Very soft in nature	Hard in nature	Tyloses are absent	Tyloses are present	It is not durable and not resistant to microorganisms	It is more durable and resists to microorganisms		3
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19	<p>Cyathium inflorescence consists of small unisexual flowers enclosed by a common involucre which mimics a single flower. Male flowers are organized in a scorpioid manner. Female flower is solitary and centrally located on a long pedicel. Male flower is represented only by stamens and female flower is represented only by a pistil. Nectar is present in involucre</p> <p>Diagram and labeled</p>	<p>2</p> <p>1</p>	3														

Section-4

(2 X 5 = 10)

Answer all the questions		Marks	Total Marks																
20 (a)	<p>1. Cytokinin promotes cell division in the presence of auxin (IAA)</p> <p>2. Cytokinin induces cell enlargement associated with IAA and Gibberellins</p> <p>3. Cytokinin can break the dormancy of certain light-sensitive seeds like tobacco and induces seed germination</p> <p>4. Cytokinin promotes the growth of lateral bud in the presence of apical bud.</p> <p>5. Application of cytokinin delays the process of aging by nutrient mobilization It is known as Richmond Lang effect.</p> <p>6. Cytokinin (i) increases rate protein synthesis (ii) induces the formation of inter-fascicular cambium. (iii) overcomes apical dominance (iv) induces formation of new leaves, chloroplast and lateral shoots.</p> <p>7. Plants accumulate solutes very actively with the help of cytokinins.</p>		5																
20 b	The Schematic representation of Glycolysis: Explanation or Flow Chart		5																
21 a	The ultra structure of a Plant cells: Drawing+Labeled the parts Explain	3 2	5																
21 b	<table border="1"> <thead> <tr> <th>Algae</th> <th>Shape of Chloroplast</th> </tr> </thead> <tbody> <tr> <td>chlamydomonas</td> <td>cup shaped</td> </tr> <tr> <td>chara</td> <td>discoid</td> </tr> <tr> <td>Ulothrix</td> <td>girdle shaped</td> </tr> <tr> <td>Oedogonium</td> <td>reticulate</td> </tr> <tr> <td>Spirogyra</td> <td>spiral</td> </tr> <tr> <td>Zygnema</td> <td>stellate</td> </tr> <tr> <td>Mougeoutia</td> <td>plate like</td> </tr> </tbody> </table>	Algae	Shape of Chloroplast	chlamydomonas	cup shaped	chara	discoid	Ulothrix	girdle shaped	Oedogonium	reticulate	Spirogyra	spiral	Zygnema	stellate	Mougeoutia	plate like		5
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