

ANSWER KEY

FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH-2020

SUBJECT: BOTANY

SCORE :30

Qn. No.	Sub. Qns	Answer key/ Value points	Score	Total Score						
I	1	(c) / Mitochondria	1	1						
	2	(a)/Dicot root	1	1						
	3	Euglena	1	1						
	4	Anaphase	1	1						
	5	2	1	1						
II	6	a. Facilitated diffusion/Facilitated transport b. Diffusion in which hydrophilic substances move across a membrane along the concentration gradient through certain transport molecules in the membrane/ Diffusion facilitated by the protein/ movement of particles through transport protein without using ATP	1 1	2						
	7	a. Synapsis/ chromosome start pairing/ formation of synaptonemal complex/ formation of bivalent or tetrad b. Pachytene c. Diplotene d. Terminalisation of chiasmata/ Nucleolus disappears/ Nuclear envelope breaks/ Chromosomes fully condensed	½ ½ ½ ½	2						
	8.	Growing plants in nutrient solution/ Soil less culture . essential elements were identified/ Deficiency symptoms discovered / commercial production of vegetables/ To make kitchen gardens/ production of seedless cucumber, tomato, lettuce/ relevant such other response (any One response)	1 1	2						
	9.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Lysosome</th> <th style="width: 33%;">Golgi apparatus</th> <th style="width: 33%;">Ribosome</th> </tr> </thead> <tbody> <tr> <td>. Rich in hydrolytic enzymes / (d)</td> <td>. Made up of many flat, disc shaped sacs or cisternae / (b)</td> <td>. Involved in protein synthesis . Membrane is absent / (a), (e)</td> </tr> </tbody> </table>	Lysosome	Golgi apparatus	Ribosome	. Rich in hydrolytic enzymes / (d)	. Made up of many flat, disc shaped sacs or cisternae / (b)	. Involved in protein synthesis . Membrane is absent / (a), (e)	½ x4	2
Lysosome	Golgi apparatus	Ribosome								
. Rich in hydrolytic enzymes / (d)	. Made up of many flat, disc shaped sacs or cisternae / (b)	. Involved in protein synthesis . Membrane is absent / (a), (e)								
	10	a. Non-cyclic / Z scheme manner / Zig Zag manner b. 1 / PS I / P 700	1+1	2						

	c. 2 / PS II / P ₇₀₀ and P ₆₈₀ d. Absent (any Two correct responses give full score)												
11	a. The breakdown of glucose in to pyruvic acid b. Cytoplasm / cytosol	1 1	2										
12	a. A. Mesophyll Cell B. Bundle sheath cell b. OAA/ Malic acid / Aspartic acid c. PEP carboxylase / PEP case	1 ½ ½	2										
13	a. Respiration takes place in the absence of oxygen/ Incomplete oxidation of glucose in anaerobic condition/ fermentation b. Converted to ethanol (ethyl alcohol, C ₂ H ₅ OH) and CO ₂	1 1	2										
14	a. Carboxylation, Reduction, Regeneration / Schematic representation of Calvin cycle b. First stable product is a 3 C compound/ 3-PGA/ 3- Phosphoglyceric acid (If a or b is correct give full score)	2	2										
15	<table border="1"> <thead> <tr> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>a. Double fertilisation</td> <td>Angiosperm/ v</td> </tr> <tr> <td>b. Heterospory</td> <td>pteridophyte/ gymnosperm/angiosperm/iv/iii/v</td> </tr> <tr> <td>c. Protonema</td> <td>Bryophyte/ i</td> </tr> <tr> <td>d. Naked seeds</td> <td>Gymnosperm/ iii</td> </tr> </tbody> </table>	A	B	a. Double fertilisation	Angiosperm/ v	b. Heterospory	pteridophyte/ gymnosperm/angiosperm/iv/iii/v	c. Protonema	Bryophyte/ i	d. Naked seeds	Gymnosperm/ iii	½ ½ ½ ½	2
A	B												
a. Double fertilisation	Angiosperm/ v												
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c. Protonema	Bryophyte/ i												
d. Naked seeds	Gymnosperm/ iii												
16	a. Schleiden and Schwann b. . all living organisms are composed of cells and product of cells . all cells arise from pre-existing cells	1 ½ x2	2										
III													
17	a. A. Twisted B. Vexillary/ Papilionaceous b. One margin of each member overlap that of the next one and so on/ regular overlapping c. Standard petal, wing (lateral) petals, keel petal (anterior small petal)	1 ½ ½ x3	3										

	18	<ul style="list-style-type: none"> a. Auxin, Cytokinin, Gibberellin b. ABA/Abscisic acid c. . inhibit seed germination/stimulate the closure of stomata/helps to withstand desiccation/antagonist to Gibberellin/seed dormancy/ seed maturation/seed development (any Two responses) 	<ul style="list-style-type: none"> ½ x3 ½ ½ x2 	
	19	<ul style="list-style-type: none"> a. Reticulate, Parallel (regardless of mentioning A and B) b. Arrangement of veins and veinlets in the leaf lamina 	<ul style="list-style-type: none"> 2 1 	3
	20	<ul style="list-style-type: none"> . present between upper and lower epidermis . made up of parenchyma cells . divided in to palisade and spongy parenchyma . adaxially placed cells are palisade . palisade cells are elongated . palisade cells are arranged vertically and parallel to each other . spongy parenchyma cells are oval or round . spongy parenchyma cells are situated below palisade and extends to the lower epidermis . spongy parenchyma is loosely packed with air cavities . palisade parenchyma contains more chloroplast . spongy parenchyma contains less chloroplast . perform photosynthesis <p>(any Three responses)</p>	1x3	3