

FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH 2018

BOTANY FINALIZED SCHEME FOR VALUATION

Question paper code. 117

Maximum Score:30


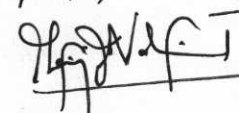

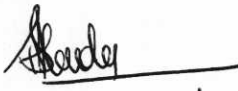

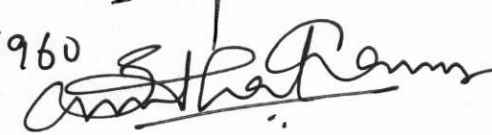
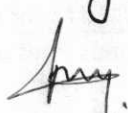
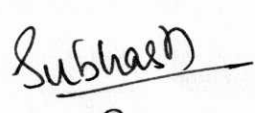





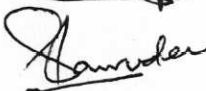
Q.No.	Value points	Splitted score	Total score										
1	Heterocysts	1	1										
2	Aleuroplasts / Proteinoplast	1	1										
3	Epiphyllous / Epitpalous / stamens attached to tepals or perianth	1	1										
4	OAA	1	1										
Any seven from Q. No. 5-13													
5	<table border="1"> <tr> <td>a) Calotropis</td> <td>ii) Valvate</td> </tr> <tr> <td>b) China Rose</td> <td>iii) Twisted/ ii)Valvate</td> </tr> <tr> <td>c) Cassia</td> <td>iv) Imbricate/ ii)valvate</td> </tr> <tr> <td>d) Pea</td> <td>i) Vexillary/ ii)Valvate</td> </tr> <tr> <td colspan="2">[Any two correct answers give 2 scores]</td> </tr> </table>	a) Calotropis	ii) Valvate	b) China Rose	iii) Twisted/ ii)Valvate	c) Cassia	iv) Imbricate/ ii)valvate	d) Pea	i) Vexillary/ ii)Valvate	[Any two correct answers give 2 scores]		½ x 4	2
a) Calotropis	ii) Valvate												
b) China Rose	iii) Twisted/ ii)Valvate												
c) Cassia	iv) Imbricate/ ii)valvate												
d) Pea	i) Vexillary/ ii)Valvate												
[Any two correct answers give 2 scores]													
6	a) Secondary xylem (b) Metaxylem c) Exarch (d) Stem	½ x 4	2										
7	Centrioles /centrosomes / Diplosome Functions - Cell division, formation of basal body of flagella or cilia, spindle apparatus during cell division. (Any one of the above functions)	1 1	2										
8	Chlorosis Necrosis Brown spots surrounded by chlorotic veins. Manganese competes with iron and magnesium for uptake. Manganese competes with magnesium for binding with enzymes. Inhibits calcium translocation in shoot apex. Inhibits Ca / Mg / Fe absorption. Induce deficiencies of Iron, Magnesium and Calcium. (any two of the above responses give 2 scores)	1+1	2										
9	FADH ₂ - Between the conversion of succinic acid to malic acid/ Succinic acid to fumaric acid/ At formation of malic acid/ At formation of fumaric acid in citric acid cycle.	1	2										

	<p>GTP- Between the conversion α- ketoglutaric acid to succinic acid / Between succinyl co.A to succinic acid / At formation of succinic acid in citric acid cycle.</p> <p>Or</p> <p>Correct schematic diagram showing the formation of FADH₂ & GTP/ Its reaction steps give full score 2</p>	1	
10	<p>Marchantia / Bryophyte</p> <p>Gemma / Gemmae</p> <p>Features - Gemmae are green, multicellular, asexual/ vegetative buds which develop in small receptacles. Gemmae become detached from the parent body and germinate to form new individuals. (Any one point from features 1 score)</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p>	2
11	<p>Requires special membrane proteins.</p> <p>Highly selective.</p> <p>Transport saturates.</p> <p>Not requires ATP energy.</p> <p>Transport of molecules along the concentration gradient.</p> <p>Respond to inhibitors.</p> <p>Under hormone regulation.</p> <p>(Any four features of facilitated diffusion)</p> <p>OR</p> <p>Diagrammatic representation of facilitated diffusion give full scores 2</p>	$\frac{1}{2} \times 4$	2
12	<p>Plants follow different pathways in response to environment or phases of life to form different kinds of structures.</p> <p>Eg: Heterophylly in Cotton, Coriander and Larkspur etc.</p> <p>(Explanation of plasticity with any one example give 2 scores)</p>	<p>1</p> <p>1</p>	2
13	Cytoplasm/cytosol	1	2




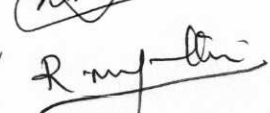
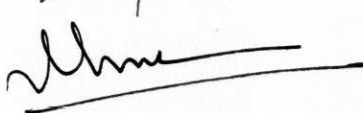
		4 ATP/ 2ATP / 8ATP	1					
Any four from Q. No. 14 -18								
14	a	Palisade parenchyma and spongy parenchyma (Chlorenchyma / Parenchyma with chloroplast give ½ score)	1	3				
	b	<table border="1"> <thead> <tr> <th>Dicot leaf</th> <th>Monocot leaf</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> Mesophyll is differentiated into palisade and spongy parenchyma. Stomata on abaxial(lower) epidermis. Dorsiventral leaf. Stoma is guarded by dumb-bell shaped guard cells. Bulliform cells are absent. </td> <td> <ul style="list-style-type: none"> Mesophyll is not differentiated into palisade and spongy parenchyma. Stomata are present on both surfaces of the epidermis. Isobilateral leaf. Stoma is guarded by kidney shaped guard cells. Bulliform cells are present. </td> </tr> </tbody> </table> <p>Any two morphological or anatomical differences from dicot and monocot leaves give 2 scores for b.</p>	Dicot leaf	Monocot leaf	<ul style="list-style-type: none"> Mesophyll is differentiated into palisade and spongy parenchyma. Stomata on abaxial(lower) epidermis. Dorsiventral leaf. Stoma is guarded by dumb-bell shaped guard cells. Bulliform cells are absent. 	<ul style="list-style-type: none"> Mesophyll is not differentiated into palisade and spongy parenchyma. Stomata are present on both surfaces of the epidermis. Isobilateral leaf. Stoma is guarded by kidney shaped guard cells. Bulliform cells are present. 	½x4	
Dicot leaf	Monocot leaf							
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15		<table border="1"> <thead> <tr> <th>Plant factors</th> <th>External factors</th> </tr> </thead> <tbody> <tr> <td>Number, size, age, orientation of leaves, mesophyll cells, chloroplasts, internal CO₂ concentration, amount of chlorophyll.</td> <td>Availability of sunlight, temperature, CO₂ concentration, water, availability of nutrients in the soil.</td> </tr> </tbody> </table> <p>(Any three factors from each category give 3 scores)</p>	Plant factors	External factors	Number, size, age, orientation of leaves, mesophyll cells, chloroplasts, internal CO ₂ concentration, amount of chlorophyll.	Availability of sunlight, temperature, CO ₂ concentration, water, availability of nutrients in the soil.	½ x 6	3
Plant factors	External factors							
Number, size, age, orientation of leaves, mesophyll cells, chloroplasts, internal CO ₂ concentration, amount of chlorophyll.	Availability of sunlight, temperature, CO ₂ concentration, water, availability of nutrients in the soil.							
16		Prophase I Leptotene, Zygotene, Pachytene, Diplotene, Diakinesis	½ ½ x 5	3				
17	a	2,4-D (2,4- Dichlorophenoxy acetic acid) /Auxin	½ x 6	3				
	b	Gibberellin/Auxin						
	c	Ethylene/Auxin						
	d	Auxin						
	e	ABA /Abscisic acid						
	f	Ethylene/ Ethephon						

		Or			
		[Any three correct responses give 3 scores]			
18		Anaphase / karyokinesis	Centromere splits and chromosomes move to opposite poles.	½ x 6	3
		Telophase / Karyokinesis	Chromosomes cluster at opposite poles and nuclear envelope assembles around.		
		Prophase / Metaphase / karyokinesis	Chromosomes seems to be with two chromatids attached at centromere.		
		Metaphase / karyokinesis	Chromosomes arranged at spindle equator.		
		Anaphase / karyokinesis	Separation of daughter chromosomes		
		Cytokinesis	Division of cytoplasm		

7 year

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