

ANSWER KEY

Code No FY 426

FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH 2023

PART - IIISUBJECT: **BOTANY**

30 SCORES

1 HOUR

Qn. No.	Sub Qn.	Answer Key / Value Points	Score	Total Score	
		PART I 1 - 5 (Any 3)	3 x 1 = 3		
1		Phycobiont	1	1	
2		1	1	1	
3		Red Algae / Rhodophyceae	1	1	
4		Radial	1	1	
5		Stroma	1	1	
		PART II 6 - 16 (Any 9)	9 x 2 = 18		
6	A	Pleuro Pneumonia Like Organism (Pleuro pneumonia - ½ score only)	1	2	
	B	Smooth Endoplasmic Reticulum	1		
7	i	Funaria / Moss plant	½	2	
	ii	A - Rhizoides / Root like structures	½		
		B - Seta C - Capsule	½ ½		
8		A	B	2	
		Amoeboid Protozoan	Entamoeba		½
		Flagellated Protozoan	Trypanosoma		½
		Ciliated Protozoan	Paramoecium		½
		Sporozoans	Plasmodium	½	
9	A	Chloroplast	½	2	
	B	Leucoplast / Lencoplast (as per QP)	½		
	C	Amyloplast	½		
	D	Aleuroplast (Any 3 correct response give full score)	½		
10		Prophase	½	2	
		Metaphase	½		
		Anaphase	½		
		Telophase	½		
		(correct sequence is not required)			

11	i	Arrangement of leaves on stem or branch or node	1	2
	ii	A – Alternate B – Opposite	$\frac{1}{2}$ $\frac{1}{2}$	
12		Hastens fruit ripening in tomatoes & apples. Promote abscission in flowers & fruits (thinning of cotton, cherry, walnut). Promote female flowers in cucumbers & thus increase the yield. Promote senescence. Enhance Respiratory climactic /Rise in rate of respiration during ripening of fruit. Breaks seed & bud dormancy. Initiate germination in peanut seeds. Initiate sprouting of potato tubers. Initiate flowering&synchronise fruit set in pineapple. Induce flowering in mango. Promote root &root hair formation, thus helping plants to increase absorptive surface. Promote rapid internode /petiole elongation in deep water rice plants. (Any 2 points)	1 + 1	2
13	A	Partial oxidation / breakdown of glucose to two molecules of pyruvic acid or Glucose → 2 Pyruvic acid	1	2
	B	Cytoplasm / Cytosol	$\frac{1}{2}$	
	C	Hexokinase.	$\frac{1}{2}$	
14	A	Gibberellin /Gibberellic Acid (GA)	$\frac{1}{2}$	2
	B	Auxin	$\frac{1}{2}$	
	C	Ethylene.	$\frac{1}{2}$	
	D	Abscisic acid / ABA	$\frac{1}{2}$	
15	A	Pachytene	$\frac{1}{2}$	2
	B	Zygotene	$\frac{1}{2}$	
	C	Diakinesis	$\frac{1}{2}$	
	D	Diplojene	$\frac{1}{2}$	
16		C ₃ Plants	C ₄ Plants	2
		<ul style="list-style-type: none"> • Kranz anatomy absent • First product of CO₂ fixation is PGA 	<ul style="list-style-type: none"> • Lack Photorespiration • Primary CO₂ acceptor is PEP 	

		PART III 17 - 20 (Any 3)	3 x 3 = 9	
17	i	A - Hypogynous flower B - Perigynous flower	$\frac{1}{2}$	3
			$\frac{1}{2}$	
	ii	Margin of thalamus grows upward enclosing the ovary completely and fused with ovary / other parts arise above the ovary / inferior ovary (any 2points)	1+1	
18		<u>Internal factors:</u> Number of leaf / size of leaf / age of leaf / orientation of leaves / Orientation of mesophyll cells / number of chloroplast / Internal CO ₂ concentration / amount of chlorophyll (any 3 internal factors)	$\frac{1}{2} \times 3$	3
		<u>External factors:</u> Availability of Light / Temperature / CO ₂ concentration / Water (any 3 external factors)	$\frac{1}{2} \times 3$	
19		Root <ul style="list-style-type: none"> • Exarch xylem • Endodermis with casparian strip 	$\frac{1}{2}$	3
		Stem <ul style="list-style-type: none"> • Hypodermis present • Conjoint and Open vascular bundle 	$\frac{1}{2}$	
		Leaf <ul style="list-style-type: none"> • Spongy parenchyma • Large empty bulliform cells 	$\frac{1}{2}$	
20	i	Krebs cycle / Citric acid cycle / Tricarboxylic acid cycle / TCA cycle	1	3
	ii	A - Oxalo acetic acid / OAA B - Citric acid	1 1	

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