STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted from the academic year 2023 – 2024)

B.Sc. DEGREE EXAMINATION, APRIL 2026
BRANCH V(a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
SIXTH SEMESTER

COURSE : MAJOR – CORE
PAPER : PLANT PHYSIOLOGY
SUBJECT CODE : 23BT/MC/PP64
TIME : 3 HOURS MAX. MARKS: 100

Q. No.	SECTION A CHOOSE THE CORRECT ANSWER (5 X 1 =5)	CO	KL
1.	Loss of water vapour from plant is called (a) evaporation (b) guttation (c) sublimation (d) transpiration	1	1
2.	In C_4 plants, C_3 cycle takes place in (a) mesophyll (b) vascular bundle (c) bundle sheathe (d) epidermis	1	1
3.	Water potential of pure water is (a) <1 (b) 1 (c) 0 (d) ∞	1	1
4.	The microscopic channel that allows molecules to transport through the cell is (a) endodermis (b) plasmodesmata (c) complementary cells (d) xylem	1	1
5.	Bursting of fruits is due to (a) transpiration (b) endosmosis (c) exosmosis (d) respiration	1	1
	FILL IN THE BLANKS. (5 X 1 =5)	**CO**	**KL**
6.	P-proteins are abundant in _____.	1	1
7.	Photosystem I is a strong _____ and weak _____.	1	1
8.	The naturally occurring Auxin is _____.	1	1
9.	When a cell is placed in a hypertonic solution, it becomes _____.	1	1
10.	Entner-Doudroff pathway is seen in _____.	1	1
	STATE WHETHER TRUE OR FALSE. (5 X 1 = 5)	**CO**	**KL**
11.	Plasmolysis occur due to endosmosis.	1	1
12.	Magnesium deficiency causes interveinal chlorosis.	1	1
13.	Plants absorb large amount of water through passive absorption.	1	1
14.	Abscisic acid induces stomatal closure.	1	1
15.	Vernalization is a process of cold treatment.	1	1
	MATCH THE FOLLOWING. (5 X 1 =5)	**CO**	**KL**
16.	Radial micellation - C_4 plants	1	1
17.	GOGAT - inhibitor	1	1
18.	Iodoacetate - biosynthesis of aminoacid	1	1
19.	Kranz anatomy - strophiolar plug	1	1
20.	Hard seed coat - stomata	1	1

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Q. No.	SECTION B (8 X 2 =16) ANSWER ANY EIGHT OF THE FOLLOWING IN 50 WORDS.	CO	KL
21.	Define Ascent of sap.	2	2
22.	Classify the types of Transpiration	2	2
23.	Comment on Donnan's equilibrium.	2	2
24.	List the significance of Photorespiration	2	2
25.	Compare Photosynthesis and Respiration.	2	2
26.	Write the importance of PEP Carboxylase	2	2
27.	Define Oxidative Phosphorylation	2	2
28.	What is Gluconeogenesis?	2	2
29.	Differentiate Florigen and Vernalin.	2	2
30.	List the factors affecting seed dormancy.	2	2
Q. No	**SECTION C (4 X 6 =24)** **ANSWER THE FOLLOWING IN 200 WORDS.**	**CO**	**KL**
31.	Illustrate the role of Abscisic acid in stomatal closure.	3	3
	(or)		
32.	Tabulate the roles, symptoms and deficiencies of any six macronutrients.	3	3
33.	Explain the process of phloem loading and unloading.	3	3
	(or)		
34.	Enumerate components of water potential with reference to cells when placed at different state.	3	3
35.	Elucidate the significance of Glyoxylate cycle.	4	4
	(or)		
36.	Assess the role of Crassulacean Acid Metabolism.	4	4
37.	Substantiate the techniques of vernalization.	4	4
	(or)		
38.	Interpret the methods of breaking seed dormancy.	4	4
Q. No.	**SECTION D (2 x 20 = 40)** **ANSWER THE FOLLOWING IN 1000 WORDS. DRAW DIAGRAMS WHEREVER NECESSARY.**	**CO**	**KL**
39.	Explicate the mechanism of stomatal transpiration in plants.	5	5
	(or)		
40.	Illustrate the carbon-di-oxide assimilation through C_3 cycle and explain how it differs from C_4 cycle.	5	5
41.	Expound the metabolic pathway of Glycolysis and Krebs's cycle.	5	5
	(or)		
42.	Deduce the Physiological effects and practical applications of any two Phytohormones.	5	5

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