

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2024
(Second Semester)

Branch - **BIOCHEMISTRY**

ADVANCED PLANT BIOCHEMISTRY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Which molecules combine with carbon dioxide in the C4 pathway? (a) Glyceraldehyde phosphate (b) Ribulose biphosphate (c) Phosphoenol pyruvic acid (d) Citric acid	K1	CO1
	2	Light-independent reactions in photosynthesis takes place at (a) Thylakoid lumen (b) Photosystem II (c) Photosystem I (d) Stromal matrix	K1	CO1
2	3	Name the amino acid which acts as a precursor of auxin biosynthesis? (a) Serine (b) Tryptophan (c) Valline (d) Tyrosine	K2	CO2
	4	Beta-carotene, a plant pigment falls under which of the following classes of terpenes? (a) Triterpenes (b) Teteraterpenes (c) Diterpenes (d) Polyterpenes	K2	CO2
3	5	Conversion of nitrogen to ammonia or nitrogenous compounds is termed as _____ (a) Nitrogen fixation (b) Nitrification (c) Denitrification (d) Nitrogen assimilation	K3	CO3
	6	What is the first stable product of nitrogen fixation in the root nodules of leguminous plants? (a) Glutamate (b) NO ₃ ⁻ (c) Ammonia (d) NO ₂ ⁻	K3	CO3
4	7	Which of the following is not a common symptom of plant disease? (a) Necrosis (b) Leaf curls (c) Perfect flowering (d) Chlorosis	K4	CO4
	8	Which of the following is not a method by which pathogens affect the yield of crops? (a) Reduce the quantity of yield (b) Reduce the quality of crop produce (c) Increase in cost production (d) Increase the flowering period	K4	CO4
5	9	The mass of chloroplast DNA is _____ (a) 10 – 15 million Daltons (b) 50 – 100 million daltons (c) 80 – 130 million Daltons (d) 25 – 125 million daltons	K5	CO5
	10	What disease is caused by the dysfunction of chloroplast? (a) Leaf spot (b) Blight spot (c) Leaf variegation (d) Powdery mildew	K5	CO5

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SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Label the Structure and function of Chloroplast.	K1	CO1
	(OR)			
	11.b.	Recall the types and mechanism of Transpiration.		
2	12.a.	Outline the mode of actions and function of Auxin and Gibberellins.	K2	CO2
	(OR)			
	12.b.	Summarize the functions of Alkaloids and flavonoids.		
3	13.a.	Construct Glutamine Oxoglutarate Aminotransferase-(GOGAT) Pathway.	K3	CO3
	(OR)			
	13.b.	Organize structure of Nif genes and its regulation.		
4	14.a.	Categorize induced systemic resistance in plants.	K4	CO2
	(OR)			
	14.b.	Inference about growth regulators in plants.		
5	15.a.	Appraise the Structure and function of Chloroplast transit peptides.	K5	CO5
	(OR)			
	15.b.	Determine the mechanism of Protein transport into mitochondria.		

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Recall Calvin cycle and its regulation.	K1	CO 1
2	17	Explain Biosynthesis, Mode of action of Alkaloids, Terpenoids phenols and Flavonoids.	K2	CO 2
3	18	Organize sulphur metabolism in plants.	K3	CO 3
4	19	Distinguish effect of pathogens and mode of pathogen in plant disease.	K4	CO 4
5	20	Interpret mechanism of protein transport in plants.	K5	CO 5

Z-Z-Z

END