

Roll No:

Jamia Hamdard
Department of Biochemistry
School of Chemical and Life Sciences, New Delhi-110062

B.Sc. Biochemistry, Semester-III Examination-2023
Paper Title: Plant Biochemistry
Paper Code: BBC CC 10

Time: 3 hour

Max Marks: 75

Note: This paper has 3 sections A, B, and C, Attempt all the three sections

Section A: Answer all the questions; Section B: Answer any 2 out of 4; Section C: Answer all the questions, each question has an internal choice

Abbreviations Used

CLO- Course Learning Outcome, PLO- Program Learning Outcome, BTL- Bloom Taxonomy Level: BT level 1-Remember; BT level 2-Understand; BT level 3-Apply; BT level 4-Analyse; BT level 5-Evaluate, BT level 6-Create

Section A (Attempt all questions)

(1X10=10 Marks)

Q. No	Questions	BTL	CLO	PLO
a	Enzyme involved in the degradation of sucrose (Sucrase/Sucrose synthase)	1	2	3
b	Futile step during biological nitrogen fixation	2	2	3
c	Enzyme involved in Ammonium assimilation (Glutamate synthase/Nitrate reductase)	1	2	2
d	Flavonoids play a regulatory role in plant development as modulators of auxin transport. (True/False)	3	3	3
e	Without their sugars, anthocyanidins are known as anthocyanins. (True/False)	3	3	2
f	The chief monoterpene constituent of peppermint oil is limonene. (True/False)	3	3	3
g	In Calvin cycle, fixing X number of CO ₂ causes the export of one glyceraldehyde -3-phosphate molecule. X is equal to	1	1	3
h	Cyclic photophosphorylation does not generate NADPH but generate proton gradient. (True/False)	3	1	3
i	 gave the concept of totipotency	1	4	3
j	Scientists, and proposed the term somaclonal variation	1	4	2

SECTION B: Long type Questions (Attempt any two out of four)**(2X15=30 Marks)**

Q. No	Questions	BTL	CLO	PLO
1	Give a detailed account of Nitrate assimilation and ammonium assimilation in Plants.	2	2	3
2	What are phenolic compounds? Give a detailed classification of phenolics compounds found in plants.	1	3	2
3	Give a detailed account of Calvin cycle, Photorespiration, and their reciprocal regulation.	3	1	3
4	Explain the two Plant Regeneration Pathways and the Environmental Factors affecting plant regeneration	4	4	3

SECTION C: Short-type Questions. (Attempt all questions, each question has an internal choice)
(5X7=35 Marks)

Q. No	Questions	BTL	CLO	PLO
1	Discuss the salient feature of Plant Glycolysis. OR How Glycolytic pathway in plants is regulated.	4	2	3
2	Discuss the mechanism of exchange of substrates and products across the mitochondrial membrane. OR Discuss Cyanide resistance in plants.	3	2	3
3	Name five plant hormones and mention commercial importance of any two. OR Discuss the role of auxin in the plants.	1	3	2
4	What are alkaloids? Mention few Alkaloids and their use in modern medicine. OR What are secondary metabolites? Discuss the classification of terpenes.	2	3	3
5	Write a short note on (a) Z-scheme of non-cyclic photophosphorylation, (b) Crassulacean acid metabolism (CAM) adaptation. OR Write a short note on (a) Composition and function of plant cell wall (b) Peroxisomes	1	1	3
6	Explain different methods of Isolation of Protoplast. OR Explain the molecular basis of Somaclonal Variation.	3	4	3
7	Explain in detail the General Plant Tissue Culture Laboratory design and equipment's used for Plant Tissue Culture technique. OR Give a detail account of Cell Suspension Culture and its applications.	2	4	3
