ourdiu.com | Shared by Abdullah Tawsif (CSE-232)

Department of Genetic Engineering and Biotechnology
Faculty of Health and Life Sciences
B. Sc. (Hons.) in Genetic Engineering and Biotechnology
Final Examination Summer 2026

Course Code: 0512-2203 **Course Title:** Plant Physiology
Level and Term: L2, T2 **Section: 251 (A+B)** **Course Teacher Initials:** AR
Time: 2 Hours **Total Marks:** 40

Answer the Following Questions: Marks

1	(a)	What is respiration? Calculate how many ATP molecules are produced from one glucose molecule through aerobic respiration when the glycerol-3-phosphate shuttle is used.	[CLO2, PLO1, C1]	3.0
	(b)	Explain the structure and function of the ETC and analyze how reduced coenzymes such as NADH and $FADH_2$ contribute to ATP production.	[CLO2, PLO1, C4]	5.0
2	(a)	What is plant growth? Explain how plant growth can be measured using changes in different parameters.	[CLO5, PLO2, C2]	3.0
	(b)	A crop initially has a dry weight of 150 g and leaf area of 2.0 m^2; after 12 days, its dry weight becomes 240 g and leaf area becomes 4.0 m^2 in a field area of 15 m^2. Calculate the RGR, CGR, and NAR using the given growth data. Mention the significance of each result.	[CLO5, PLO1, C3]	5.0
3	(a)	What are phytohormones? Classify the major plant hormones according to their chemical nature and mention their major sites of synthesis and functions.	[CLO7, PLO1, C2]	4.0
	(b)	What is growth retardant? Explain the interactions of hormones in plant growth and development.	[CLO7, PLO2, C4]	4.0
4	(a)	What is photoperiod? Discuss how photoperiod regulate flowering through the actions of different genes.	[CLO8, PLO1, C6]	4.0
	(b)	Explain why vernalization is important and analyze how cold treatment suppresses the FLC gene to promote flowering.	[CLO8, PLO2, C5]	4.0
5	(a)	Describe the major structural features of a seed with a suitable illustration. State why a seed is important.	[CLO7, PLO2, C1]	4.0
	(b)	What is seed viability? Explain how suitable artificial treatments can break dormancy and induce germination in a dormant seed.	[CLO7, PLO2, C3]	4.0