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Daffodil International University

**Department of Genetic Engineering and Biotechnology**
Faculty of Health and Life Sciences
B. Sc. (Hons.) in Genetic Engineering and Biotechnology
Midterm 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:** 1 Hour 30 Minutes **Total Marks:** 25

**Answer the Following Questions:** Marks

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|---|---|---|---|---|
| 1 | (a) | Define colloid. Classify colloidal states in plants. | [CLO3, PLO1, C2] | 2.5 |
| | (b) | Differentiate between diffusion and osmosis. | [CLO3, PLO1, C4] | 2.5 |
| 2 | (a) | What is apoplastic pathway? Mention the external factors affecting water absorption. | [CLO3, PLO2, C2] | 2.5 |
| | (b) | Distinguish between transpiration and guttation. | [CLO3, PLO1, C4] | 2.5 |
| 3 | (a) | Define transpiration. Classify transpiration with examples. | [CLO3, PLO1, C1] | 3.0 |
| | (b) | Describe the structure of stomata with figure. | [CLO3, PLO2, C5] | 2.0 |
| 4 | (a) | Mention the source, functions and deficiency symptoms of two macronutrients. | [CLO3, PLO1, C1] | 2.0 |
| | (b) | Explain the Lundegardh's Theory of active mineral absorption. | [CLO3, PLO2, C2] | 3.0 |
| 5 | (a) | Define photosynthesis. Write the components of photosynthesis. | [CLO1, PLO2, C3] | 2.0 |
| | (b) | Discuss how C4 plants assimilate $CO_2$ to produce carbohydrate. | [CLO1, PLO2, C6] | 3.0 |