

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

I. Term explanation (28%, 4 points for each)

1. Acclimation
2. Senescence
3. Apoplast
4. Mycorrhizae
5. Rhizosphere
6. Turgor
7. Vascular tissue

II. Questions (72%, 8 points for each)

1. **How** do legumes recruit rhizobia from soil? (5 %) **Why** do legumes need rhizobia? (3 %)
2. **What** is Calvin Cycle? Please **explain** it as much as you know. (8 %)
3. **List** two essential elements for plants (except for C, H, and O) **and explain** their functions. (8 %)
4. **List** two major products of light reaction **and explain** the generation process. (8 %)
5. **List** two plant hormones **and explain** their functions. (8 %)
6. **What** are the two major forms of allocated carbon in plants? (4 %) **Where** and **why** are they produced? (4 %)
7. **Why** is C4 photosynthesis more efficient than C3? (8 %)
8. **When** does photorespiration occur? (2 %) **What** does it produce? (2 %) **How** do plants deal with the product(s)? (4 %)
9. For nitrogen source, **why** most plants prefer nitrate? (3 %) **How** does it assimilate in plants? (5 %)