

(作答時不必抄題，但須標明題號)

一、解釋下列與植物生長和發育有關的名詞，每題包括兩個名詞。(每小題6分，計18分)

1. respiration vs. photorespiration
2. photomorphogenesis vs. scotomorphogenesis
3. self-incompatibility vs. male sterility

二、說明下列與植物構造有關的名詞，每題包括兩個名詞。(每小題6分，計12分)

1. stolons vs. rhizomes
2. staminate flower vs. dioecious plant

三、解釋下列與植物遺傳與育種有關的名詞，每題包括兩個名詞。(每小題6分，計12分)

1. transgene vs. genetically modified organism
2. genetic erosion vs. *in situ* conservation

四、說明果實更年性反應 (climacteric response) 的生理及生化特徵。(8分)

五、請翻譯或說明下列英文論文题目的文意：(每小題4分，計20分)

- (1) The addition of gibberellic acid to auxin solutions increases sugar accumulation and sink strength in developing auxin-induced parthenocarpic tomato fruits.
- (2) Effect of application methods of organic fertilizer on growth, soil chemical properties and microbial densities in organic bulb onion production.
- (3) Interaction of short day and timing of nitrogen fertilization on growth and flowering of 'Korona' strawberry (*Fragaria × ananassa* Duch.).
- (4) The number of leaves required for floral induction and translocation of the florigenic promoter in mango (*Mangifera indica* L.) in a tropical climate.
- (5) Enhanced micropropagation of *Dendrobium huoshanense* through protocorm-like bodies: The effects of cytokinins, carbohydrate sources and cold pretreatment.

六、請舉具體例子說明植物生長調節劑(plant growth regulators)或營養物質在(1)種子繁殖、(2)無性繁殖、(3)增進株高、(4)矮化植株、(5)促進開花、(6)提高逆境抗性、(7)增進著果、(8)促進落果以利採收等方面之應用。(15分)

七、「精緻農業」為行政院推出的六大新興產業之一，其包括三大主軸與發展願景如下：(1)健康農業—深化安全驗證，打造健康無毒島，(2)卓越農業—領先科技研發，打造卓越農科島，(3)樂活農業—重塑農村風情，打造樂活休閒島。請問您認為園藝可以在精緻農業的三大主軸中扮演何種角色？每一主軸各舉例說明1-2項。(15分)