

題號：359

國立臺灣大學 113 學年度碩士班招生考試試題

科目：植物生理學(A)

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一、解釋名詞：每題 2 分

1. Photomorphogenesis and skotomorphogenesis
2. Hydrotropism and phototropism
3. Climacteric and non-climacteric fruits
4. Stratification and vernalization
5. The external coincidence model and Floral ABCE model

二、簡答題：

6. Compare and contrast phytochrome A versus phytochrome B with respect to their responses. (5 分)
7. What is the "shade avoidance response," and how is it regulated by phytochrome? (6 分)
8. Discuss the role of auxin and polar auxin transport in embryo development. (5 分)
9. Compare and contrast the signaling molecules and genes that function in the maintenance of the shoot and root apical meristems. (6 分)
10. Describe the genetic control of patterning for stomata and trichomes. (6 分)
11. What are the major categories of genes that regulate floral development and how do they interact to regulate floral organ formation? (6 分)
12. What is imprinting and what role does it play in endosperm development? (6 分)

三、簡答題，每大題各 10 分

13. 說明：(1)如何檢測與呈現植物光合作用效率？(2)光、二氧化碳、水分及溫度如何影響？
14. 說明植物種子形成與發育、休眠及萌發時，數種關鍵植物賀爾蒙之動態變化。
15. 說明：(1)豆科植物沒有與微生物共生時如何進行氮同化 (nitrogen assimilation)，(2)植物與根瘤菌共生之優點與缺點。
16. (1)引起植物缺水之環境逆境因子有哪些？(2)植物抗缺水逆境之應對反應以及調控機制為何？
17. 說明：(1)植物抵抗病菌/病蟲之防禦機制，(2)植物遭遇病菌/病蟲侵襲時，如何權衡維持生長發育與防禦反應。

試題隨卷繳回