

(作答時不必抄題，但須標明題號)

- 一、氮、磷、鉀是肥料三要素，其中以氮肥為首。除了少數植物可以與固氮菌共生，大部分植物利用氮是透過硝酸鹽和銨鹽，也是氮肥主要的兩種形式。請問：
- (1) 多數植物的主要氮源是哪一種形式？簡述植物如何吸收？ (10 分)
  - (2) 氮肥施用過多，對土壤 pH 值有何影響？會對環境生態帶來什麼樣的衝擊，又是如何造成此問題？ (15 分)
- 二、應用點燈來調整園產品生產已廣泛運用在多種園藝作物的生產策略中。請舉出 2 個有應用點燈調節生產的作物，並說明點燈如何調節該作物的生產。 (15 分)
- 三、在極端氣候的影響下，提高水分利用效率的節水措施是作物生產的重要概念。請寫出以下兩個相關名詞的意思。 (10 分)
- (1) regulated deficit irrigation (RDI)
  - (2) water use efficiency (WUE)
- 四、請翻譯或說明下列專有名詞。(每個名詞 3 分，計 15 分)
- (1) **Acclimatization:** The forcing of plants to adapt to conditions unlike those under which they were grown. Foliage plants are acclimatized for the low light conditions in homes, offices, and so on.
  - (2) **Bolting:** The rapid elongation of a flower stalk from a rosette growth habit that occurs with many biennials and some annuals such as lettuce or spinach.
  - (3) **Damping-off:** A seed or seedling disease in which decay occurs before emergence through the soil surface or after emergence, when the seedling stem collapses near the soil surface.
  - (4) **Root-pruning:** The cutting of a portion of the root system to encourage new root growth or to check the growth of the top of the plant. Plants are often root-pruned to prepare them for transplanting.
  - (5) **Scarification:** A seed treatment to make a hard seed coat more permeable to gases, water, or the emerging seedling. Scarification can be accomplished mechanically or with acid soaks.
- 五、請列舉五種植物荷爾蒙(Plant hormone 或 Phytohormone)，並指出每種植物荷爾蒙在園藝作物上的應用(每種荷爾蒙各 2 項應用)。 (20 分)
- 六、食農教育(Food and Agricultural Education)與智慧農業(Smart Agriculture)是目前農業部推動的兩大政策，請選擇其中一種(食農教育或智慧農業)，說明園藝作物或園藝產業對此政策可以扮演的角色。 (15 分)