

Advanced Horticultural Science Quiz

Horticulture · Answer Key · 3 Questions

1. Which photosynthetic pathway is characterized by spatial separation of initial carbon fixation in mesophyll cells from the Calvin cycle in bundle sheath cells, a mechanism often found in plants adapted to hot, arid environments?

- A) C3 pathway
- B) C4 pathway**
- C) CAM pathway
- D) Photorespiration pathway

2. Indole-3-acetic acid (IAA) is the most common naturally occurring auxin. Its primary mode of action regarding cell elongation involves activating which type of cellular pumps to acidify the cell wall?

- A) Potassium efflux pumps
- B) Sodium-potassium ATPase pumps
- C) H⁺-ATPase proton pumps**
- D) Calcium channel pumps

3. Which soil property primarily determines the soil's inherent capacity to retain and supply essential positively charged nutrient ions (cations) to plant roots?

- A) Soil pH
- B) Water holding capacity
- C) Cation Exchange Capacity (CEC)**
- D) Organic matter decomposition rate