Higher Combined version — Higher Tier (★) included; Separate-only (◆) removed.

Q1. Distinguish between transpiration and translocation.

[3 marks]

Q2. Describe how THREE factors increase the rate of transpiration and explain the mechanism in each case.

[4 marks]

Total: 7 marks

Q1 (3 marks)

Distinguish between transpiration and translocation.

- Transpiration: loss of water vapour from leaves through stomata — drives water up xylem [1]
- Translocation: transport of dissolved sugars (sucrose) through phloem from leaves to rest of plant [1]
- Transpiration: one direction (upward); translocation: both directions [1]

Q2 (4 marks)

Describe how THREE factors increase the rate of transpiration and explain the mechanism in…

- Higher temperature: water evaporates faster from cell surfaces → faster rate [1]
- Higher light intensity: stomata open wider → more water vapour escapes [1]
- Lower humidity: steeper concentration gradient between leaf and air → faster diffusion [1]
- Higher wind speed: water vapour carried away → maintains gradient [1] — any 3