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

**Q1. Explain how guard cells control the opening and closing of stomata.**

**[3 marks]**

★ HIGHER TIER

**Q2. ★ Explain how auxin causes positive phototropism in a plant shoot.**

**[4 marks]**

★ HIGHER TIER

**Q3. ★ Give THREE commercial applications of plant hormones.**

**[3 marks]**

**Total: 10 marks**

**Q1 (3 marks)**

*Explain how guard cells control the opening and closing of stomata.*

- In light/adequate water: guard cells become turgid → bow outward → stoma opens [1]
- In darkness/drought: guard cells lose water → flaccid → stoma closes [1]
- This balances gas exchange (photosynthesis) against water conservation [1]

**Q2 (4 marks) [★ HT]**

★ *Explain how auxin causes positive phototropism in a plant shoot.*

- Auxin produced at shoot tip [1]
- Unilateral light → auxin migrates to shaded side [1]
- Higher auxin on shaded side → cells elongate more [1]
- Differential elongation → shoot curves towards light [1]

**Q3 (3 marks) [★ HT]**

★ *Give THREE commercial applications of plant hormones.*

- Rooting powder (auxin): stimulates root growth on cuttings [1]
- Selective weedkiller (auxin): kills broadleaf weeds without harming narrow-leaf crops [1]
- Ethene: ripens fruit commercially at controlled time [1] — accept: gibberellins for larger/seedless fruit