

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

★ HIGHER TIER

**Q1. ★ Describe adult cell cloning. Use the example of Dolly the sheep.**

[4 marks]

---

---

---

---

---

---

---

---

★ HIGHER TIER

**Q2. ★ Suggest ONE advantage and ONE disadvantage of cloning animals.**

[2 marks]

---

---

---

---

---

**Total: 6 marks**

**Q1 (4 marks) [★ HT]**

★ Describe adult cell cloning. Use the example of Dolly the sheep.

- Nucleus removed from donor body cell [1]
- Nucleus inserted into enucleated egg cell [1]
- Embryo stimulated to develop [1]
- Implanted in surrogate mother → lamb born with identical DNA to nucleus donor (Dolly) [1]

**Q2 (2 marks) [★ HT]**

★ Suggest ONE advantage and ONE disadvantage of cloning animals.

- Advantage: preserve endangered species / produce animals with desired traits [1]
- Disadvantage: reduced genetic diversity; ethical concerns; low success rate; premature ageing [1]