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

Q1. Explain why signals at a synapse can only travel in one direction.

[3 marks]

★ HIGHER TIER

Q2. ★ Name THREE regions of the brain and state the function of each.

[3 marks]

★ HIGHER TIER

Q3. ★ Describe TWO methods used by scientists to investigate brain function.

[3 marks]

Total: 9 marks

Q1 (3 marks)

Explain why signals at a synapse can only travel in one direction.

- Neurotransmitters released only from PRE-synaptic membrane [1]
- Receptors only on POST-synaptic membrane [1]
- So signal can only travel pre-synaptic → post-synaptic, not backwards [1]

Q2 (3 marks) [★ HT]

★ Name THREE regions of the brain and state the function of each.

- Cerebral cortex: conscious thought, memory, language, personality [1]
- Cerebellum: coordination and balance [1]
- Medulla oblongata: automatic functions — breathing rate and heart rate [1]

Q3 (3 marks) [★ HT]

★ Describe TWO methods used by scientists to investigate brain function.

- MRI scanning: shows which brain regions are active (increased blood flow) during different tasks [1]
- Studying patients with localised brain damage: linking damage to specific area with loss of specific function [1]
- Electrical stimulation during brain surgery: stimulating areas and observing patient response [1] — any 2