

Foundation Combined — only core Foundation content included.

Q1. Describe the pathway of a reflex arc from stimulus to response when touching a sharp pin.

[4 marks]

Q2. Explain why signals can only travel in one direction across a synapse.

[2 marks]

Total: 6 marks

Q1 (4 marks)

Describe the pathway of a reflex arc from stimulus to response when touching a sharp pin.

- Pain detected by receptors in skin [1]
- Sensory neurone carries impulse to spinal cord [1]
- Relay neurone across spinal cord [1]
- Motor neurone to effector muscle → hand moves away [1]

Q2 (2 marks)

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

- Neurotransmitters only released from pre-synaptic membrane [1]
- Receptors only on post-synaptic membrane — signal can only travel one way [1]