

Foundation Separate version — Higher Tier (★) questions removed.

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

[4 marks]

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

[2 marks]

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**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]