**Stage 2 Biology**

The following examination-style questions are suitable for assessing evidence of learning in **Topic 3.** They do not constitute a complete test.

* 1. Which one of the following combinations is correct for a human reflex action?

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Mode of communication* | *Speed of communication* | *Area affected* |
| J. | hormones | fast | localised |
| K. | nerves | slow | widespread |
| L. | nerves | fast | localised |
| M. | hormones | slow | widespread |

* 1. *Refer to the following flow chart, which shows some of the steps in the response in a human being to an increase in the level of carbon dioxide in the blood:*

level of carbon dioxide in blood increases

detected by receptors in the brain

brain sends message

faster, deeper breathing results

diaphragm and intercostal muscles respond

Based on the information in the flow chart

1. an increase in the level of carbon dioxide in the blood is detected by receptors in the blood.
2. the sensory neuron needed to cause a response is located in the diaphragm.
3. the effector causes breathing to become faster and deeper, which increases the level of carbon dioxide in the blood.
4. a decrease in the level of carbon dioxide in the blood would result in slower breathing.
   1. The diving reflex in humans is the body’s response to immersion of the face in cold water. This response includes vasoconstriction in the limbs.
5. Explain how vasoconstriction in the limbs may help an individual to survive in a cold environment.

(3 marks)

1. State one other response of the human body to a decrease in body temperature.

(1 mark)

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