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Level: HL IB in Biology

Subject: Biology

Topic: IB HL Biology

Type: Topic Question

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All International Baccalaureate IB Topic Questions HL Biology

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**BIOLOGY**

**HL - IB**

Key skills

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**\*\*Question 1\*\***

Which statement best describes the action of peristalsis in the alimentary canal?

- A. Striated muscles contract to move the partially digested food in a wave-like movement along the alimentary canal.
- B. Circular muscles contract behind the partially digested food and the longitudinal muscles shorten.
- C. Skeletal muscle contractions force the food through the alimentary canal with valves preventing backflow.
- D. Longitudinal muscles contract behind the partially digested food and the circular muscles shorten.

[1 mark]

**\*\*Question 2\*\***

Which statement accurately describes the raising of heart rate by the cardiorespiratory centre of the brain?

- A. Low blood pressure, high blood oxygen concentration, and high blood pH result in a nerve signal sent by the acceleratory centre to speed up heart rate.
- B. Low blood pressure, low blood oxygen concentration, and low blood pH result in a nerve signal sent by the acceleratory centre to speed up heart rate.
- C. High blood pressure, high blood oxygen concentration, and high blood pH result in a nerve signal sent by the acceleratory centre to speed up heart rate.
- D. High blood pressure, low blood oxygen concentration, and low blood pH result in a nerve signal sent by the acceleratory centre to speed up heart rate.

[1 mark]

**\*\*Question 3\*\***

A person is admitted to hospital after suffering a stroke. It was found that the suprachiasmatic nucleus in the hypothalamus of the brain was damaged by the event. This resulted in the pineal gland secreting less melatonin into the bloodstream.

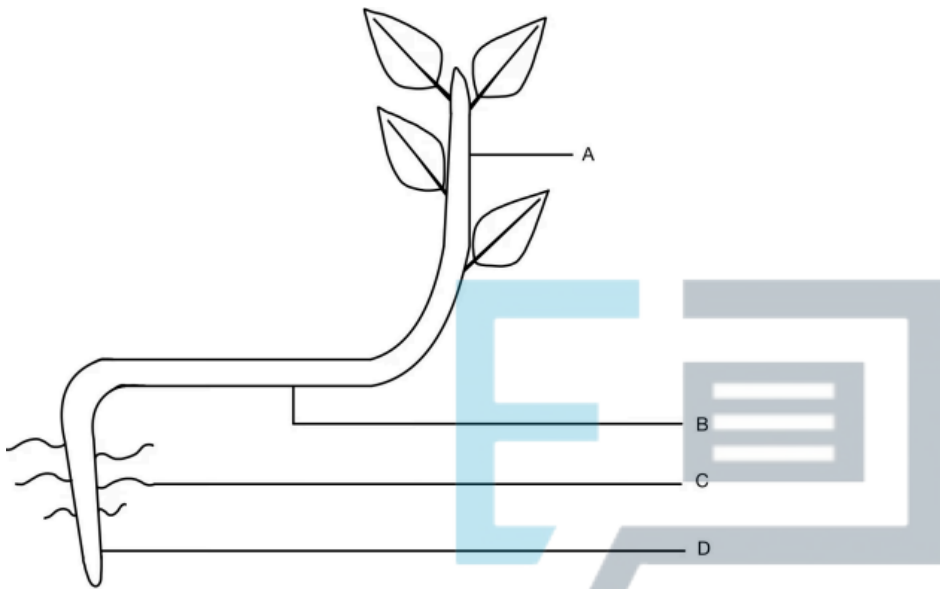
Which of the following changes would be observed in the patient?

- A. Increased thirst and more frequent urination.
- B. Disrupted sleep patterns and increased irritability.
- C. Constantly feeling cold and weight gain.
- D. Fatigue and forgetfulness.

[1 mark]

**\*\*Question 4\*\***

A pot plant falls over and after a few days shows the following growth pattern.



Which of the following is the most accurate explanation for the growth shown at each of the labels on the diagram?

- A. This part of the stem demonstrates negative gravitropism in order to receive the maximum amount of sunlight for photosynthesis.
- B. This part of the stem shows positive phototropism as it will bend towards the light.
- C. The lateral roots demonstrate negative gravitropism as they are not growing towards gravity.
- D. The main root shows positive gravitropism as it is bending towards gravity.

[1 mark]

**\*\*Question 5\*\***

What would not be considered a function of auxins?

- A. Stimulates cell elongation in shoots, leading to an increase in plant height.
- B. Stimulates the development of axillary buds further away from the shoot apical meristem.
- C. Inhibits the development of axillary buds close to the shoot apical meristem.
- D. Inhibits cell elongation in root cells, therefore slowing down root growth.

[1 mark]

**\*\*Question 6\*\***

Which would be the most accurate description and explanation for the growth response that would be observed in the shoot tip below?



Description	Explanation
A. The shoot tip grows away from the light	Auxins inhibit cell elongation on the shady side of the shoot tip
B. The shoot tip grows towards the light	Auxins inhibit cell elongation on the side of the light source
C. The shoot tip continues to grow straight up	Auxins are evenly distributed across the shoot tip
D. The shoot tip grows towards the light	Auxins cause cell elongation on the shady side of the shoot tip

[1 mark]