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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 of the following statements about melatonin are correct?

- I. Melatonin secretion increases in the evening in response to darkness and decreases at dawn in response to light.
- II. Increasing melatonin levels stimulate the body, preparing it for waking up and staying awake during the day.
- III. Melatonin is secreted by the hypothalamus.
- IV. The night-time drop in core body temperature triggers an increase in melatonin secretion.
- V. Melatonin levels vary during a 12-hour cycle known as a circadian rhythm.

- A. II, IV, and V
- B. I, III, and IV
- C. I only
- D. II and V

[1 mark]

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

Which of A - D gives the most accurate description of how efflux pumps contribute to plant tropisms?

- A. Efflux pumps pump low-density particles to the top of a horizontal root in order to initiate a positive gravitropism.
- B. Light denatures PIN3 proteins which leads to fewer efflux pumps, and hence less cell elongation, on the sunny side of a plant shoot.
- C. Efflux pumps are coded for by PIN3 genes and carry auxins from one cell to another in order to maintain an uneven distribution of auxins.
- D. Efflux pumps carry auxins away from growing tissues on the removal of a stimulus, in order to maintain an even distribution of auxins.

[1 mark]