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Level: HL IB in Biology

Subject: Biology

Topic: IB HL Biology

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2002

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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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### Answer 1

The correct answer is C, as statement I is the only correct statement here.

Statement II is incorrect, as decreasing melatonin levels lead to the body's preparation for waking up and staying awake during the day.

Statement III is incorrect, as melatonin is secreted by the pineal gland, which, like the hypothalamus, is also located in the brain.

Statement IV is incorrect, as it is thought that increased melatonin at night contributes to the night-time drop in core body temperature in humans, rather than the other way around.

Statement V is incorrect, as humans are adapted to live in a 24-hour cycle and many aspects of our physiology and behaviour, including physical activity, sleep, body temperature, and secretion of hormones, follow specific and regular cycles throughout the 24-hour period - these daily cycles are known as circadian rhythms.

### Answer 2

The correct answer is C because efflux pumps are responsible for maintaining an auxin concentration gradient, without which different parts of the root/shoot will grow at the same rate. This does not allow for different rates of cell elongation on different sides of the root/shoot, so would not be able to bring about a tropic response.

A, B and D are all non-sense answers with many inaccuracies.