

# Response & Stimuli

## Question Paper 2

<b>Level</b>	International A Level
<b>Subject</b>	Biology
<b>Exam Board</b>	Edexcel
<b>Topic</b>	Respiration, Muscle and Internal Environment
<b>Sub-Topic</b>	Response & Stimuli
<b>Booklet</b>	Question paper 2

**Time Allowed:** 12 minutes

**Score:** /10

**Percentage:** /100

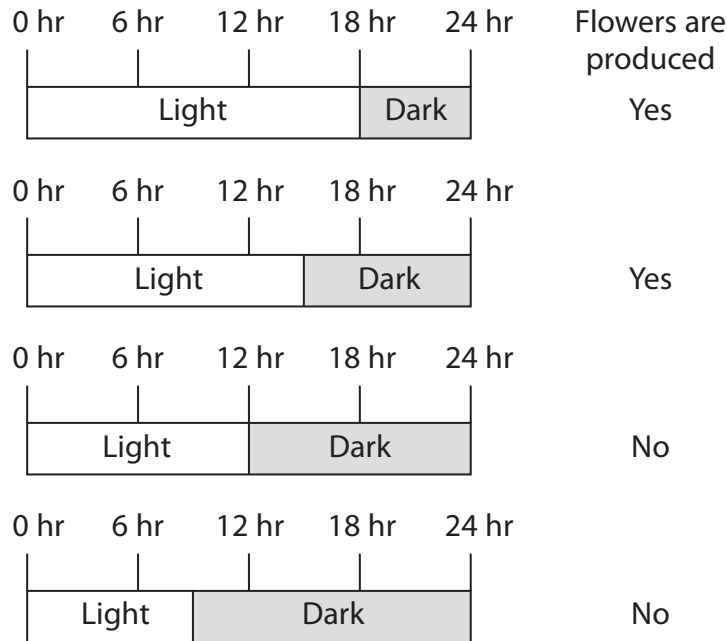
**Grade Boundaries:**

A*	A	B	C	D	E	U
>85%	77.5%	70%	62.5%	57.5%	45%	<45%

1 Both plants and animals are able to respond to stimuli using photosensitive pigments.

(a) The photosensitive pigment in plants can be involved in a range of responses to environmental cues. This includes flower production in response to day length.

The diagram below shows the results of a study on the effect of day length on flowering in one species of plant.



(i) Place a cross ☒ in the box to complete the conclusion made using these results.

The critical amount of daylight needed for the production of flowers is

- A between 15 and 18 hours
- B between 12 and 15 hours
- C between 9 and 12 hours
- D between 6 and 9 hours

(1)

(ii) The photosensitive pigment involved in making this plant species produce flowers is likely to be (1)

- A IAA
- B chlorophyll
- C FAD
- D phytochrome

(iii) Suggest how the plants were grown to ensure this study was valid. (2)

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(iv) Suggest how this study could be changed to produce a more accurate conclusion. (1)

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(b) For some plant species, day length is not an environmental cue for the production of flowers.

Suggest **one** environmental cue, other than day length, that could stimulate plants of these species to produce flowers. (1)

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(c) Rhodospin is found in rod cells in the retina of mammalian eyes.

(i) State the location of rhodopsin within a rod cell.

(1)

(ii) In the table below, place a tick (✓) in the box if the statement applies to the description and place a cross (✗) in the box if the statement does not apply.

(3)

Description	Statement		
	Opsin binds to the rod cell membrane	Rhodopsin bleaches	ATP used
Rhodopsin responding to light			
Rhodopsin being reformed			

(Total for Question 1 = 10 marks)