

GCSE Biology A (Gateway)

J247/01 B1-B3 and B7 Foundation (Foundation Tier)

Question Set 21

1

Plant hormones are involved in controlling some processes in plants.

(a) Which processes in plants are controlled by plant hormones?

Tick (✓) **three** boxes.

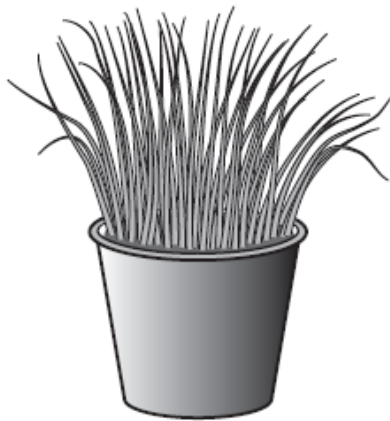
- | | |
|--------------------|-------------------------------------|
| Flower opening | <input checked="" type="checkbox"/> |
| Germination | <input checked="" type="checkbox"/> |
| Photosynthesis | <input type="checkbox"/> |
| Pollination | <input type="checkbox"/> |
| Respiration | <input type="checkbox"/> |
| Shedding of leaves | <input checked="" type="checkbox"/> |

[3]

(b) A child sets up an experiment to grow grass seeds in a plastic cup.

The grass seeds in cup **A** are grown directly under a window.
The grass seeds in cup **B** are grown by a window to the side.

Look at the results.



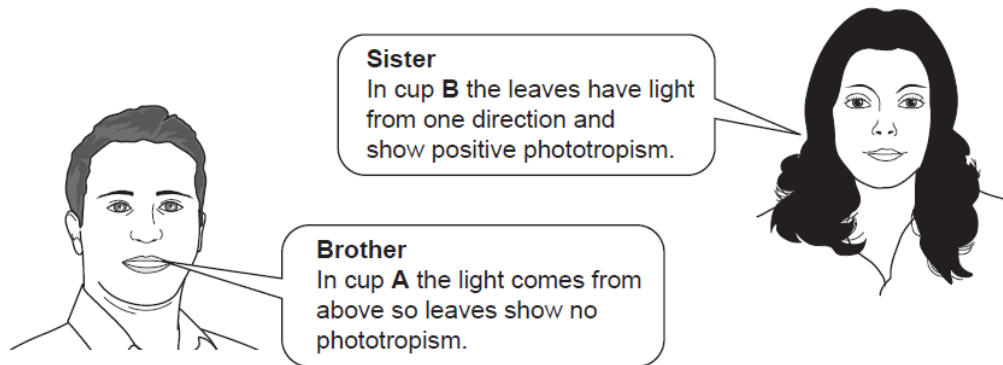
A
Grass seeds grown
directly under
a window



B
Grass seeds grown
by a window to
the side

The child's older brother and sister try to explain what has caused the results.

They make different conclusions.



(i) Explain why the sister has given the better conclusion.

[2]

The sister is correct in that the leaves in cup B only have light from one direction, and they grow towards this source so show positive phototropism. This is better than the brother who states that the leaves in cup A show 'no phototropism'. The seeds are grown with light coming from above. The majority of the seeds grow straight up, towards the light. Thus, they also show positive phototropism.

(ii) Name the hormone that causes phototropism.

[1]

Auxin

(c) (i) Different hormones control the human menstrual cycle.

Complete the sentences to describe how the menstrual cycle is controlled.

Use words from the list.

Each word can be used once, more than once, or not at all.

fetus **follicle** **FSH** **oestrogen** **progesterone**

The hormone released by the pituitary gland is called**FSH**.....

This hormone acts on the ovary and causes the growth of a.....**follicle**.....

The hormone that maintains the lining of the uterus is called...**progesterone**...

[3]

- (ii) The table shows the concentration of oestrogen in the blood during the first 7 days of the menstrual cycle.

Time in days	Oestrogen (mg/100 cm ³ of blood)
1	20
2	20.5
3	25
4	27.5
5	30
6	32.5
7	34

Put a ring around the days below which show a steady increase in the concentration of oestrogen.

Days 1–4

Days 2–5

Days 3–6

Days 4–7

[1]

- (d) The lining of the uterus is shed during menstruation.

New cells are needed to replace the lining of the uterus.

Describe the processes that occur to make these new cells.

[3]

When the egg matures inside the follicle, the follicle produces oestrogen hormone.

Oestrogen is secreted by the ovaries. It travels in the bloodstream to the uterus.

Oestrogen causes growth and repair of the uterus wall lining by increasing blood supply. Hence the uterus lining becomes thicker with more blood vessels. After ovulation, ovary releases progesterone to allow proliferation of uterine wall.

Total Marks for Question Set 21: 13

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