

AQA, OCR, Edexcel

GCSE Science

GCSE Biology

Plant Hormones and Response Answers

Name:

M M E

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Total Marks: /22

Q1: Why do plants require hormones?

A= Allow response to changes in the environment

(1 mark)

Q2: Explain how a seedling responds to its environment to allow the roots to grow down and shoots to grow up.

A= Award one mark for each of the following:

- Roots – Respond to gravity/Grow towards gravity
- Shoots – Grow against gravity / Grow towards light

(2 marks)

Q3: What is phototropism?

A= Response of plants to light

(1 mark)

Q4: What hormone controls a plants response to gravity and light?

A= Auxin

(1 mark)

Q5: Design an experiment to show the uneven distribution seen in the hormone Auxin.

A= Award 1 mark for continuous prose and 4 of the following:

- 2 shoots
- 2 light sources
- Light from above/ light from the side
- Uneven distribution causes shoots to grow towards the light source

(5 marks)

Q6: Explain why the ability to change the direction of roots and shoots is essential to seedling survival.

A= 1 mark for each of the following:

- Cant control seed dispersal
- Can end up in any direction in soil

(2 marks)

Q7: What is gravitropism?

A= the response of a plant to gravity

(1 mark)

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Q8: Explain where the hormone Auxin would gather to turn a horizontal root downwards.

A= Lower side of the root

(1 mark)

Q9: How do gardeners cause a cutting to produce roots?

A= Accept 1 of the following:

- Use rooting powder/compounds
- Dip in Auxin

(1 mark)

Q10: How does Auxin work as a weed killer?

A= Causes uncontrolled growth

(1 mark)

Q11: What are gibberellins used for?

A= initiate seed germination

(1 mark)

Q12: Discuss the ways people have found to use gibberellins.

A= Accept any 3 of the following:

- Brewing – end seed dormancy
- Speed up germination
- Encourage year round flowering
- Increase fruit size

(1 mark)

Q13: How do fruit farmers use ethane?

A= Accept 1 of the following:

- Control ripening
- Storage

(1 mark)

Q14: Why is ethane an unusual hormone?

A= Present in gaseous form.

(1 mark)