

Plant Hormones Quiz Questions and Answers PDF

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Which plant hormone is primarily responsible for cell elongation?

- Gibberellins
- Auxins ✓**
- Ethylene
- Cytokinins

The primary plant hormone responsible for cell elongation is auxin. It promotes growth by stimulating the elongation of cells in the plant's stems and roots.

What hormone is most associated with fruit ripening?

- Abscisic Acid
- Auxins
- Cytokinins
- Ethylene ✓**

The hormone most associated with fruit ripening is ethylene, which plays a crucial role in the maturation process of many fruits.

Explain the significance of hormonal crosstalk in plant development and provide an example.

Hormonal crosstalk allows plants to integrate multiple signals for coordinated growth. For example, auxins and cytokinins balance root and shoot development.

What is the primary role of gibberellins in plants?

- Promoting cell division
- Inducing fruit ripening
- Closing stomata
- Stimulating stem elongation ✓**

Gibberellins are plant hormones that primarily promote stem elongation, seed germination, and flowering. They play a crucial role in regulating various growth processes in plants.

Which hormone is involved in the response to abiotic stress like drought?

- Ethylene
- Abscisic Acid ✓**
- Cytokinins
- Gibberellins

Abscisic acid (ABA) is a key hormone that plays a crucial role in plant responses to abiotic stresses such as drought by regulating stomatal closure and promoting stress tolerance mechanisms.

Which hormone is known to delay leaf senescence?

- Gibberellins
- Auxins
- Ethylene
- Cytokinins ✓**

Cytokinins are plant hormones that play a crucial role in delaying leaf senescence by promoting cell division and growth, thus maintaining leaf vitality for a longer period.

Which plant hormone induces seed dormancy?

- Auxins
- Abscisic Acid ✓**
- Ethylene
- Gibberellins

Abscisic acid (ABA) is the plant hormone primarily responsible for inducing seed dormancy, helping to prevent germination under unfavorable conditions.

Which hormone primarily affects leaf abscission?

- Abscisic Acid
- Cytokinins
- Gibberellins
- Ethylene ✓

The hormone that primarily affects leaf abscission is ethylene. Ethylene promotes the process of leaf drop by influencing the cells in the abscission zone of the leaf stem.

Which of the following hormones are involved in seed germination? (Select all that apply)

- Gibberellins ✓
- Abscisic Acid
- Cytokinins ✓
- Auxins

Seed germination is primarily influenced by hormones such as gibberellins, auxins, and abscisic acid. These hormones regulate various processes including seed growth, dormancy breaking, and the initiation of metabolic activities necessary for germination.

Which of the following hormones are involved in cell division? (Select all that apply)

- Auxins ✓
- Gibberellins
- Ethylene
- Cytokinins ✓

Hormones such as insulin, growth hormone, and certain sex hormones play significant roles in regulating cell division and growth. These hormones facilitate various cellular processes that are essential for tissue development and repair.

Which hormones are involved in fruit development? (Select all that apply)

- Auxins ✓
- Ethylene ✓
- Abscisic Acid
- Gibberellins ✓

Several hormones play crucial roles in fruit development, including auxins, gibberellins, and ethylene. These hormones regulate processes such as cell division, growth, and ripening in fruits.

Explain how auxins contribute to phototropism in plants.

Auxins promote cell elongation on the shaded side of the plant, causing it to bend towards the light.

Describe the role of gibberellins in seed germination and how they interact with other hormones.

Gibberellins break seed dormancy and promote germination by stimulating enzyme production that mobilizes food reserves. They often counteract the effects of abscisic acid.

Which hormones play a role in stress resistance? (Select all that apply)

- Abscisic Acid** ✓
- Gibberellins
- Cytokinins
- Ethylene** ✓

Hormones such as cortisol, adrenaline, and norepinephrine are key players in the body's response to stress, helping to regulate stress resistance and the overall stress response.

Which hormones are known to regulate stomatal closure? (Select all that apply)

- Auxins
- Ethylene
- Gibberellins
- Abscisic Acid ✓**

Stomatal closure is primarily regulated by the hormones abscisic acid (ABA) and ethylene. These hormones play crucial roles in plant responses to environmental stress, particularly in response to drought conditions.

Discuss the mechanism by which abscisic acid helps plants cope with drought stress.

Abscisic acid induces stomatal closure to reduce water loss and triggers gene expression related to stress resistance.

How do cytokinins and auxins interact to regulate plant growth and development?

Cytokinins promote cell division, while auxins promote cell elongation. Their ratio influences processes like root and shoot growth.

Describe the process of fruit ripening and the role of ethylene in this process.

Ethylene accelerates ripening by breaking down cell walls, converting starches to sugars, and changing pigment.

Which hormone is crucial for phototropism in plants?

- Gibberellins
- Ethylene
- Cytokinins
- Auxins ✓**

Auxin is the hormone that plays a key role in phototropism, allowing plants to grow towards light by promoting cell elongation on the side of the plant that is away from the light source.

Which hormones can delay leaf senescence? (Select all that apply)

- Cytokinins ✓**
- Auxins
- Ethylene
- Gibberellins ✓**

Several hormones are known to play a role in delaying leaf senescence, including cytokinins, gibberellins, and auxins. These hormones promote cell division and growth, which can help maintain leaf vitality and delay the aging process.