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Solution 1
Phytohormones.
Solution 2
Abscisic acid is responsible for the wilting and falling of leaves in plants.
Solution 3
Auxin.
Solution 4
Auxin is made at the tip of the plant stem.
Solution 5
Mimosa pudica.
Solution 6
A plant hormone that promotes growth is Gibberellin and the hormone that inhibits growth is abscisic acid.
Solution 7
Thigmonastic movement in the leaves of touch-me-not plant is very quick and can be observed easily.
Solution 8
Phytohormones.
Solution 9
(a) Light.
(b) Gravity.
(c) Chemical.
(d) Water.
(e) Touch.
Solution 10
(a) Phototropism.
(b) Geotropism.
(c) Chemotropism.
(d) Hydrotropism.
(e) Thigmotropism.
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Solution 11
Thigmonasty.
Solution 12
(a) Root.
(b) Stem.
Solution 13
(a) is not growth movement whereas
(b) is growth movement.
Solution 14
(a) Root.
(b) Stem.
Solution 15
(a) Gravity.
(b) Light.
Solution 16
(a) Phototropism.
(b) Geotropism.
(c) Light.
(d) Gravity.
(e) Touch.
(f) Earth, gravity.
(g) Geotropism.

(h) Auxin.
(i) Photonasty.
Solution 17
(a) Bending of stem towards light.
(b) Folding up of leaves of a sensitive plant on touching.
Solution 18
The hormones that control and coordinate the activities in plants are called plant hormones. The four types of plant hormones are:
(i) Auxins - It promotes cell enlargement and cell differentiation in plants.
(ii) Gibberellines - It helps in breaking the dormancy in seeds and buds.
(iii) Cytokinins - It promotes cell division in plants.
(iv) Abscisic acid - It promotes the dormancy in seeds and buds.
Solution 19
(a) Root bends downwards in the direction of gravity; positive geotropism. (b) Stem bends towards the light; positive phototropism.
Solution 20
(a) Stem grows upward against the direction of gravity; negative geotropism.(b) Root bends away from light; negative phototropism
Solution 21
(a) In Mimosa pudica plant, the leaves fold up in response to touch. This phenomenon is known as thigmonasty.
(b)
(i) A dandelion flower opens up in the morning in bright light. This phenomenon is known is positive photonasty.
(ii) At night, the dandelion flower closes and this phenomenon is known as negative photonasty.
Solution 22
(a) The plant root grows towards water and the phenomenon is known as the hydrotropism.
(b) (i) During the daytime the petals of moon flower close when there is bright light.
(ii) At night, when it is dark the petals of moon flower opens up. This phenomenon is known as photonasty.
Solution 23
Tendrils are the thin, thread-like growths on the stems or leaves of climbing plants. The two types of tendrils are stem tendrils and leaf tendrils. The tendrils grow towards the things they happen to touch. This phenomenon is known as thigmotropism.
Solution 24
The five types of tropisms are: Phototropism, Geotropism, Chemotropism, Hydrotropism and Thigmotropism. The various types of tropic movements help the plants to survive. Example even if a seed is planted upside down, its root will grow downwards into earth because it is positively geotropic.
Solution 25
The growth of a plant part due to chemical stimulus is known as chemotropism. For example the growth of pollen tube towards the ovule induced by a sugary substance as stimulus. This is an example of positive chemotropism.
Solution 26
Tropic movements
1. These movements are always in the direction of the stimulus.
2. These movements are slow.
3. These movements are exhibited by all parts of a plant. For example, movement of shoot towards the light and not towards gravity.
Nastic movements
1. These movements are neither away nor towards the stimulus.
2. These movements are fast.
3. These movements are exhibited by the flat organs (like leaves and petals of flowers) of a plant. For example, the bending and drooping of leaves in 'Touch-me-not' plant.

Solution 27

(a) The movement of a plant part in response to an external stimulus in which the direction of response is not determined by the direction of stimulus is called nastic movement. Example: The folding up of the leaves of a sensitive plant on touching is an example of thigmonasty.

(b)

Photonasty	Thigmonasty
The non-directional movement of a plant part (usually petals of flowers) in response to light is called photonasty. Example: The opening and closing of petals of dandelion flowers in response to the intensity of light	The non-directional movement of a plant part in response to the touch of an object is called thigmonasty. Example: In Mimosa pudica plant, the leaves fold up in response to touch

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