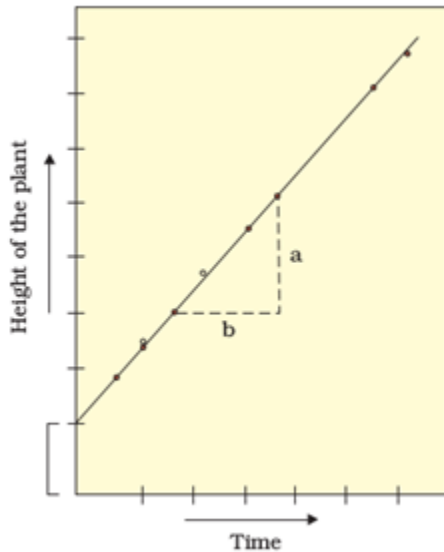


## Plant Growth and Development

**Que.1.** Analyse the graph and identify the type of growth. Write the mathematical equation used to calculate this kind of growth. [Marks : (2)]



**Ans.** Arithmetic growth / Linear growth

$$L_t = L_0 + rt$$

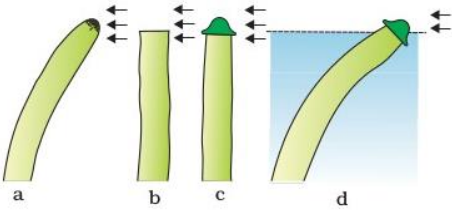
**Que.2.** Choose the correct answer. [Marks : (1)]

Living differentiated cells, that lost the capacity of division regain the ability to divide under certain conditions. This is called:

- A. Plasticity
- B. Redifferentiation
- C. Dedifferentiation
- D. Heterophylly

**Ans.** Dedifferentiation

**Que.3.** The following experiment is used to demonstrate the presence of a hormone at the tip of coleoptile. Identify the hormone and state any four physiological activities of this hormone. [Marks : (3)]



**Ans. Auxin**

Effects: Cause apical dominance, induce parthenocarp, used as herbicides, help in xylem differentiation, helps in cell division, initiate rooting in stem cuttings, promote flowering in pineapple, help to prevent early drop of leaves and fruits, promote abscission of older mature leaves and fruits. (Any four responses).

**Que.4. Match the items of Column A with Column B**

**[Marks : (2)]**

A	B
1. Gibberellic acid	a. Indole compound
2. Absciscic acid	b. Gaseous hormone
3. Auxin	c. Adenine derivatives
4. Cytokinin	d. Carotenoids
	e. Terpenes

**Ans. 1. Gibberellic acid - Terpenes**

2. Absciscic acid - Carotenoids

3. Auxin - Indole compound

4. Cytokinin - Adenine derivatives

**Que.5. Match the items of column A with B**

**[Marks : (2)]**

A	B
1. Gibberellin	a. Fruit ripening
2. Ethylene	b. Closing of stomata
3. Auxin	c. Promote nutrient mobilisation
4. Absciscic acid	d. Bolting
	e. Apical dominance

**Ans. 1. Gibberellin - Bolting**

2.Ethylene -Fruit ripening

3.Auxin -Apical dominance

4.Absciscic acid – Closing of stomata

**Que.6. The increased growth per unit time is termed as growth rate. What are the two types of growth rates?. Write the shapes of their growth curves? [Marks :(2)]**

**Ans.** Arithmetic and Geometric growth rates.

Arithmetic growth curve-Linear

Geometric growth curve -sigmoid/ S curve

**Que.7. Which of the following statements are correct. [Marks :(1)]**

1.Gibberellin is a gaseous hormone.

2.Auxin helps to initiate rooting in stem cuttings.

3. Spraying sugar cane crop with gibberellin increases the length of the stem.

4.Absciscic acid causes apical dominance.

A. 1 and 2

B. 2 and 3

C. 2 and 4

D. 1 and 4

**Ans.** B . 2and3

**Que.8. In some plants, flowering is dependent on exposure to low temperature. Name the phenomenon. Give two examples of such plants. [Marks :(2)]**

**Ans.** Vernalisation.

Examples: Wheat , Barley, Rye, Sugar beet, Cabbage, Carrot.(Any two)

**Que.9. Which of the following is not a function of Gibberellins. [Marks :(1)]**

Delay senescence , increase the length of grape stalks, Apical dominance, Bolting in rosette plants.

**Ans.** Apical dominance.

**Que.10. Removal of shoot tips usually results in the growth of lateral buds. [Marks :(2)]**

a. Give two areas where application of this process is widely used.

b. Name the hormone helps to overcome apical dominance.

**Ans.** a. 1. Tea plantation 2. Hedge making

b. Cytokinins

**Que.11. Expand IAA and 2,4-D.**

**[Marks :(2)]**

**Ans.** IAA- Indole 3- acetic acid.

2,4-D - 2,4 – dichlorophenoxyacetic acid.

**Que.12. Name the plant hormone isolated from coconut milk and give two physiological effects of this hormone.**

**[Marks :(3)]**

**Ans.** Cytokinin / Kinetin / Zeatin

Physiological effects- overcome apical dominance, promote nutrient mobilisation, produce new leaves, chloroplast in plants ,promote cell division. (Any four)