

Plant Growth and Development — Assignment 1

Class 11 Biology · Topic-wise question bank covering every concept of the chapter · Narayan Gurukul Academy

Instructions: (1) Attempt all questions. This worksheet walks through every concept of the chapter, topic by topic.
(2) The interactive MCQ version of these questions (with instant answer reveal) is available on the notes page.
(3) Universal values: $g = 10 \text{ m/s}^2$ unless stated. Give answers with correct SI units.

Growth in Plants — Phases and Parameters

MCQ Questions (choose the correct option)

- Plant growth is defined as
 - an irreversible permanent increase in size
 - a reversible change
 - a temporary swelling
 - movement
- The phase of growth with maximum rate is
 - log phase
 - lag phase
 - stationary phase
 - senescence
- Growth is measured by parameters such as
 - length, area and volume
 - colour
 - taste
 - smell
- The region of active growth in a plant is the
 - meristem
 - root cap
 - bark
 - pith

1 Mark Questions

- Define growth in plants.
- Name the three phases of growth.
- Which region of the plant shows active growth?

2 Mark Questions

- Distinguish between growth and development.
- Name the parameters used to measure plant growth.

3 Mark Questions

- Describe the phases of growth in plants.
- Explain the parameters used to measure plant growth.

Growth Rates — Arithmetic and Geometric

MCQ Questions (choose the correct option)

1. When only one daughter cell continues to divide, growth is
 - (A) arithmetic
 - (B) geometric
 - (C) exponential
 - (D) logarithmic
2. When both daughter cells divide, growth is
 - (A) geometric
 - (B) arithmetic
 - (C) linear
 - (D) constant
3. A plot of arithmetic growth with time is
 - (A) linear
 - (B) sigmoid
 - (C) exponential
 - (D) parabolic
4. A plot of geometric growth with time is
 - (A) sigmoid
 - (B) linear
 - (C) constant
 - (D) inverse

1 Mark Questions

1. What is arithmetic growth?
2. What is geometric growth?
3. Which growth gives a sigmoid curve?

2 Mark Questions

1. Distinguish between arithmetic and geometric growth.
2. What is the sigmoid growth curve?

3 Mark Questions

1. Explain arithmetic and geometric growth with graphs.
2. Describe the sigmoid curve and its phases.

Conditions for Plant Growth

MCQ Questions (choose the correct option)

1. Plant growth requires an adequate supply of
 - (A) water, oxygen and nutrients
 - (B) only light
 - (C) only water
 - (D) only CO₂
2. Growth is optimum at a

- (A) favourable temperature
 - (B) very high temperature
 - (C) very low temperature
 - (D) freezing point
3. The essential gases required for growth include
- (A) oxygen and carbon dioxide
 - (B) nitrogen only
 - (C) hydrogen only
 - (D) helium
4. Growth is regulated by
- (A) both internal and external factors
 - (B) external factors only
 - (C) internal factors only
 - (D) neither

1 Mark Questions

1. Name two conditions necessary for plant growth.
2. Which temperature range is best for plant growth?
3. Name one external factor affecting growth.

2 Mark Questions

1. State the conditions necessary for plant growth.
2. How do light and temperature affect growth?

3 Mark Questions

1. Explain the conditions necessary for plant growth.
2. Describe the external and internal factors affecting growth.

Differentiation, Dedifferentiation and Redifferentiation

MCQ Questions (choose the correct option)

1. The process by which cells become specialised is
 - (A) differentiation
 - (B) dedifferentiation
 - (C) redifferentiation
 - (D) senescence
2. The regaining of the ability to divide by mature cells is
 - (A) dedifferentiation
 - (B) differentiation
 - (C) redifferentiation
 - (D) growth
3. The formation of secondary xylem and phloem from cork cambium is an example of
 - (A) redifferentiation
 - (B) differentiation
 - (C) dedifferentiation

- (D) senescence
4. Cells produced from dedifferentiated cells that lose the ability to divide are
- (A) redifferentiated
 - (B) dedifferentiated
 - (C) undifferentiated
 - (D) meristematic

1 Mark Questions

1. Define differentiation.
2. What is dedifferentiation?
3. What is redifferentiation?

2 Mark Questions

1. Distinguish between differentiation and dedifferentiation.
2. Give one example each of dedifferentiation and redifferentiation.

3 Mark Questions

1. Explain differentiation, dedifferentiation and redifferentiation with examples.
2. Describe the sequence of cell fate during plant development.

Plant Growth Regulators — Phytohormones

MCQ Questions (choose the correct option)

1. Auxin promotes
 - (A) cell elongation
 - (B) cell death
 - (C) dormancy only
 - (D) senescence only
2. Cytokinin promotes
 - (A) cell division
 - (B) cell elongation only
 - (C) abscission
 - (D) dormancy only
3. Gibberellin promotes
 - (A) stem elongation
 - (B) fruit ripening
 - (C) senescence
 - (D) abscission
4. Absciscic acid is mainly a
 - (A) growth inhibitor
 - (B) growth promoter
 - (C) pigment
 - (D) enzyme

1 Mark Questions

1. Name one growth promoter.
2. Name one growth inhibitor.
3. Which hormone promotes fruit ripening?

2 Mark Questions

1. Distinguish between growth promoters and growth inhibitors.
2. State two functions of auxin.

3 Mark Questions

1. Describe the plant growth regulators and their functions.
2. Give the physiological effects of auxins, gibberellins, cytokinins, ethylene and ABA.

Photoperiodism and Vernalisation

MCQ Questions (choose the correct option)

1. Photoperiodism is the response of plants to
 - (A) duration of light
 - (B) temperature
 - (C) water
 - (D) nutrients
2. Plants requiring a long day for flowering are
 - (A) long-day plants
 - (B) short-day plants
 - (C) day-neutral plants
 - (D) xerophytes
3. Vernalisation is the promotion of flowering by
 - (A) low temperature
 - (B) high temperature
 - (C) light
 - (D) water
4. The site of perception of light for photoperiodism is the
 - (A) leaf
 - (B) root
 - (C) flower
 - (D) stem tip

1 Mark Questions

1. What is photoperiodism?
2. What is vernalisation?
3. Name one long-day plant.

2 Mark Questions

1. Distinguish between photoperiodism and vernalisation.
2. Classify plants based on photoperiod.

3 Mark Questions

1. Explain photoperiodism with examples.
2. Describe vernalisation and its significance.