# **Factors Influencing Seed Germination**

#### A. Choose the correct answer:

- 1. Which of the following is essential for seed germination?
  - a) Sunlight
  - b) Water
  - c) Wind
  - d) Sound

#### 2. What role does oxygen play in seed germination?

- a) It helps in photosynthesis
- b) It provides energy through respiration
- c) It makes the seed heavier
- d) It dissolves the seed coat

#### 3. Which factor can delay or prevent seed germination?

- a) Adequate water supply
- b) Optimum temperature
- c) Lack of oxygen
- d) Presence of nutrients

#### **B. Fill in the Blanks:**

- 1. Seeds require \_\_\_\_\_, \_\_\_\_, and \_\_\_\_\_ for germination.
- The process by which a seed absorbs water and swells is called \_\_\_\_\_\_.
- 3. \_\_\_\_\_ is the first structure to emerge from a germinating seed.
- 4. Lack of \_\_\_\_\_ can cause seeds to remain dormant for a longer period.
- 5. The process of breaking dormancy in some seeds using cold treatment is known as \_\_\_\_\_.

#### C. Case Study:

A team of scientists conducted an experiment to observe the factors influencing seed germination. They planted three sets of seeds:

- Set A was provided with water, oxygen, and kept at an optimum temperature.
- Set B was given water but was placed in an airtight container without oxygen.
- Set C was placed in dry soil without water.

After one week, the scientists recorded the following observations:

- Set A showed healthy germination with visible shoots and roots.
- Set B did not germinate at all.

• Set C showed no signs of growth.

### **Questions & Answers:**

- 1. Why did the seeds in Set A germinate successfully?
- 2. What was the reason for no germination in Set B?
- 3. How did the lack of water affect the seeds in Set C?
- 4. Based on this experiment, explain the three major factors required for seed germination.

## **D. Short Answer Questions:**

- 1. Why is water essential for seed germination?
- 2. How does oxygen help in seed germination?
- 3. What happens if the temperature is too high or too low for seed germination?

## E. Long Answer Questions:

- 1. Explain the different factors affecting seed germination with examples.
- 2. Discuss the role of enzymes in seed germination and how external conditions influence their activity.
- 3. What is seed dormancy? Describe methods used to break dormancy and promote germination.