



**CREST**  
*Olympiads*  
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# CREST Science Olympiad (CSO) **Worksheet** *for* **Class 7**



**Topic**

## Asexual Reproduction in Plants



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## Worksheet on Asexual Reproduction in Plants

1. Consider the following paragraph about tissue culture and answer the following question.

Tissue culture is a technique used to propagate plants in a controlled environment. It involves the growth and development of plant tissues or cells in an artificial nutrient medium under controlled environmental conditions. This method allows for the mass production of plants with desirable traits and the generation of disease-free plants.

**Question:** Based on the information provided, which of the following statements is correct?

- a. Tissue culture is a natural method of plant propagation.
  - b. Tissue culture is an unpredictable and unreliable technique.
  - c. Tissue culture is a laboratory-based method used for plant propagation.
  - d. Tissue culture is a technique exclusively used for sexual reproduction in plants.
2. In an experiment, a gardener removes a leaf from a begonia plant and places it in a container of water. After a few weeks, roots start to emerge from the leaf. This experiment demonstrates:
- a. Sexual reproduction through leaves
  - b. Sexual reproduction in plants
  - c. Vegetative reproduction through leaves
  - d. Reproduction by grafting.
3. In the following question, you will find an assertion and a reason. Select the appropriate option that applies.

**Assertion:** Vegetative propagation allows for the production of genetically identical offspring.

**Reasoning:** Vegetative propagation involves the use of plant parts like stems, leaves, or roots to create new plants. These plant parts contain the exact genetic information of the parent plant. When these parts are used for propagation, they give rise to new individuals that are genetically identical to the parent plant.

- a. Both the assertion and reasoning are correct, and the reasoning explains the assertion.
- b. Both the assertion and reasoning are correct, but the reasoning does not explain the assertion.
- c. The assertion is correct, but the reasoning is incorrect.
- d. The assertion is incorrect, but the reasoning is correct.

4. Complete the following table by choosing the correct option.

Method of Reproduction	Description	Example
A	Production and dispersal of specialised cells	Moss
B	Swollen underground stems containing buds for new growth	Potatoes
Layering	C	D

- a. A: Spore Formation, B: Tubers, C: Roots develop from the buried portion of the branch, D: Cherry
- b. A: Fragmentation, B: Bulbs, C: Plants grow in laboratories, D: Mango
- c. A: Spore Formation, B: Budding, C: Roots develop from the buried portion of the branch, D: Sugarcane
- d. A: Budding, B: Tubers, C: Plants grow in laboratories, D: Apple

5. Please review the following statements and determine which one is true and which one is false.

- I. Sexual reproduction in plants involves the fusion of male and female gametes, resulting in genetically diverse offspring.
- II. Vegetative propagation is a type of asexual reproduction that cannot occur without any human intervention.
- III. Budding is a method of asexual reproduction in which gametes are inserted into the bark of another plant.

- a. I: True, II: True, III: False
- b. I: True, II: False, III: False
- c. I: False, II: False, III: True
- d. I: False, II: False, III: True

## Answer Key

1. c - Tissue culture is a laboratory-based method used for plant propagation is the correct statement based on the information provided. Tissue culture involves the growth and development of plant tissues or cells in a controlled environment, typically in a laboratory setting.
2. c - In this experiment, a leaf from a begonia plant is used to propagate a new plant. The leaf is placed in water, and after a few weeks, roots start to emerge from the leaf. This process indicates that the leaf has the ability to develop roots and grow into a new plant, showcasing reproduction through leaves.
3. a - The assertion states that vegetative propagation allows for the production of genetically identical offspring. The reasoning provides an explanation by stating that vegetative propagation involves the use of plant parts that contain the exact genetic information of the parent plant. When these parts are used for propagation, they give rise to new individuals that are genetically identical to the parent plant. Therefore, the reasoning supports and explains the assertion, making both the assertion and reasoning correct.
4. a - A: Spore Formation, B: Tubers, C: Roots develop from the buried portion of the branch, D: Cherry
5. b - Statement I is true because sexual reproduction in plants involves the fusion of male and female gametes, leading to genetically diverse offspring.  
Statement II is false because vegetative propagation can occur naturally in plants without human intervention, such as through the growth of roots from stem cuttings or the development of new shoots from runners.  
Statement III is false because budding is a method of asexual reproduction where a bud, not gametes, is inserted into the bark of another plant.

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