



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



Topic

Nutrition in Plants



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Worksheet on Nutrition in Plants

1. Consider the following statements and choose the correct option:

Statement 1: Saprophytic nutrition is a mode of nutrition in which organisms obtain nutrients from dead and decaying matter.

Statement 2: Saprophytic nutrition is exclusive to plants.

- a. Statement 1 is correct but statement 2 is incorrect.
- b. Statement 1 is incorrect but statement 2 is correct.
- c. Both statements are correct.
- d. Both statements are incorrect.

2. What is the purpose of boiling the leaf in water in the experiment to test for starch?

- a. To remove excess water from the leaf
- b. To stop ongoing chemical reactions
- c. To break down the leaf's cell walls
- d. To enhance the leaf's colour for better observation

3. Consider the following statements and choose the correct option:

- I. Carnivorous plants obtain their nutrients by trapping and consuming small animals.
- II. All carnivorous plants are incapable of photosynthesis.
- III. Carnivorous plants have adaptations that help them capture prey.

- a. Only I is correct.
- b. Only III is correct.
- c. II and III are correct.
- d. I and III are correct.

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

- I. Autotrophic nutrition involves organisms producing their own food from inorganic substances.
- II. Symbiotic relationships involve two organisms living together and sharing shelter and nutrients.
- III. Parasitic plants are independent of other organisms for their nutrition.

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

- 5. In an experiment to determine the rate of photosynthesis, several identical potted plants were placed under different light conditions. After a specific period of time, the amount of oxygen produced by each plant was measured. What would be the expected outcome?**
- a. Plants exposed to the highest light intensity will produce the most oxygen, while those in low light will produce the least.
 - b. Plants exposed to the lowest light intensity will produce the most oxygen, while those in high light will produce the least.
 - c. All plants will produce the same amount of oxygen regardless of light intensity.
 - d. Plants exposed to any light intensity will not produce oxygen due to the absence of carbon dioxide.

Answer Key

- 1. a - Statement 1 is accurate as saprophytic nutrition refers to the mode of obtaining nutrients from dead and decaying matter, which is applicable to various organisms such as fungi and bacteria. However, statement 2 is incorrect since saprophytic nutrition is not exclusive to plants; it is observed in multiple organisms across different kingdoms.
- 2. b - The purpose of boiling the leaf in water in the experiment to test for starch is to stop ongoing chemical reactions. Boiling the leaf denatures enzymes present in the leaf, effectively halting any ongoing metabolic processes that could interfere with the starch test. This ensures that the results of the test reflect the presence or absence of starch accurately.
- 3. d - Statement I is correct: Carnivorous plants obtain their nutrients by trapping and consuming small animals.
Statement II is incorrect: All carnivorous plants are incapable of photosynthesis.
Statement III is correct: Carnivorous plants have adaptations that help them capture prey.
- 4. c - Statement I is true: Autotrophic nutrition involves organisms producing their own food from inorganic substances.
Statement II is true: Symbiotic relationships involve two organisms living together and sharing shelter and nutrients.
Statement III is false: Parasitic plants are not independent of other organisms for their nutrition. Instead, they rely on other organisms, known as hosts, to derive nutrients.
- 5. a - Photosynthesis is a process that requires light energy to convert carbon dioxide and water into glucose and oxygen. Light is a crucial factor that drives photosynthesis. In this experiment, when plants are exposed to higher light intensity, they receive more energy to fuel the photosynthetic process. As a result, they produce a higher amount of oxygen. Conversely, plants in low-light conditions receive less energy, leading to a lower rate of oxygen production. Thus, the expected outcome is that the plants exposed to the highest light intensity will produce the most oxygen, while those in low light will produce the least.

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