

CLASS VII SCIENCE | NUTRITION IN PLANTS

CHAPTER ASSESSMENT | CBSE-STYLE QUESTION FORMATS

Time: 1 hour 30 minutes

Questions: 25

Maximum Marks: 50

Name: _____ Roll No.: _____ Date: _____

Instructions: All questions are compulsory. Write answers on a separate answer sheet. Use scientific terms in your answers. Marks are given in brackets. Label diagrams neatly wherever required. Questions progress from basic to challenging.

SECTION A | OBJECTIVE QUESTIONS

12 × 1 = 12 marks

- Which part is the main site of food preparation in most green plants? [1]
(A) Root (B) Leaf (C) Flower (D) Seed
- Which gas from the air is used in photosynthesis? [1]
(A) Oxygen (B) Nitrogen (C) Carbon dioxide (D) Hydrogen
- What colour does starch give when iodine solution is added? [1]
(A) Green (B) Red (C) Blue-black (D) Yellow
- Water and dissolved mineral nutrients enter a plant mainly through its: [1]
(A) Flowers (B) Fruits (C) Leaves (D) Roots
- Fill in the blank:** The pigment that traps light energy is _____. [1]
- Fill in the blank:** Tiny pores on the surface of leaves are called _____. [1]
- True or False:** Green plants absorb ready-made carbohydrates from the soil. [1]
- True or False:** Plants need nitrogen to make proteins. [1]
- Match the columns.** Write the two correct pairs. (½ mark each) [1]

Column A	Column B
(i) Pitcher plant	(a) Saprotrophic nutrition
(ii) Bread mould	(b) Insectivorous nutrition
- Very short answer:** Name the mode of nutrition that depends on other organisms. [1]

For Q11-12, choose the correct assertion-reason option:

- (A) Both A and R are true; R correctly explains A. (B) Both are true; R does not explain A.
(C) A is true, but R is false. (D) A is false, but R is true.

- Assertion (A):** Green plants are autotrophs. [1]
Reason (R): They make food from simple substances using light energy.
- Assertion (A):** Pitcher plants trap insects. [1]
Reason (R): They lack chlorophyll and cannot carry out photosynthesis.

SECTION B | SHORT ANSWERS

5 × 2 = 10 marks

- State any two purposes for which living organisms need food. (1 + 1) [2]
- Write the photosynthesis word equation. Add the two conditions above the arrow. (1 + 1) [2]
- Compare the food sources of a parasite and a saprotroph. Give one example of each. (1 + 1) [2]
- Some leaves look red or purple but still make food. Explain this observation. [2]
- Identify the parts marked **X** and **Y** in this sketch of a structure on a leaf surface. (1 + 1) [2]



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Continue answering on your answer sheet. Give reasons wherever asked.

Q18-25 | 28 marks

SECTION C | APPLICATION QUESTIONS

4 × 3 = 12 marks

- 18.** A cactus has leaves reduced to spines. Explain how it still makes food and state one advantage of having spines. **(2 + 1)** **[3]**
- 19.** Moist bread kept in a warm place develops cotton-like patches. Identify the group of organisms responsible. Explain how they digest and absorb food, and how they reach the bread. **(1 + 1 + 1)** **[3]**
- 20.** A lichen contains an alga and a fungus. State the contribution of each partner and name the relationship between them. **(1 + 1 + 1)** **[3]**
- 21.** A green pitcher plant can photosynthesise, yet it traps insects. Explain this using the soil condition, the nutrient supplied by insects and how it obtains that nutrient. **(1 + 1 + 1)** **[3]**

SECTION D | CASE-BASED QUESTIONS

2 × 4 = 8 marks

22. Investigating food formation **[4]**

A teacher destarches a healthy plant, covers part of an attached leaf with opaque paper on both sides, then places the plant in sunlight. A standard iodine test gives these results:

Part of the leaf	Colour after the iodine test
Uncovered part	Blue-black
Part covered with opaque paper	Yellow-brown

- (a) Which part of the leaf contains starch? **(1)**
- (b) Why was the plant destarched before the experiment? **(1)**
- (c) Name the condition being tested and state the conclusion supported by the results. **(2)**

23. A farmer's crop plan **[4]**

A farmer grows peas between two cereal crops. Small nodules develop on the pea roots. After harvesting, the roots and crop residues are mixed back into the soil.

- (a) Name the bacterium associated with the root nodules. **(1)**
- (b) Explain what the bacterium and the pea plant each gain from this association. **(2)**
- (c) How can returning the pea crop residues to the soil benefit the next crop? **(1)**

SECTION E | LONG ANSWERS AND REASONING

2 × 4 = 8 marks

- 24.** Arjun says, "Roots absorb ready-made food from soil, so fertiliser can replace sunlight." Correct both parts of his claim. Explain what roots absorb, where and how food is made, and why fertiliser cannot replace sunlight. **(1 + 2 + 1)** **[4]**
- 25.** Two similar healthy plants are destarched. Plant P is watered and kept in sunlight. Plant Q is kept in darkness **without water**. Later, P tests positive for starch and Q tests negative. A student claims that lack of sunlight alone caused the difference. **[4]**
 - (a) Is this a fair test of the need for sunlight? Identify the flaw and explain why the conclusion is unreliable. **(2)**
 - (b) Redesign the comparison: state what you would change and what you would keep the same. **(2)**