

Exploring Plant Biology and Ecology

Plants & Nature · Answer Key · 18 Questions

1. What is the primary function of stomata in plants?

- A) To absorb water from the soil
- B) To regulate gas exchange (CO₂ and O₂) and transpiration**
- C) To anchor the plant to the substrate
- D) To produce chlorophyll for photosynthesis

2. Which part of a plant cell is responsible for photosynthesis?

- A) Mitochondrion
- B) Nucleus
- C) Chloroplast**
- D) Vacuole

3. The process by which plants release water vapor into the atmosphere is called:

- A) Respiration
- B) Transpiration**
- C) Absorption
- D) Germination

4. What is the key molecule that gives plants their green color and is essential for photosynthesis?

- A) Carotenoid
- B) Anthocyanin
- C) Xanthophyll
- D) Chlorophyll**

5. In plants, the vascular tissue responsible for transporting water and minerals from the roots to the rest of the plant is called:

- A) Phloem
- B) Epidermis
- C) Xylem**
- D) Cambium

6. Which of the following is a symbiotic relationship between a fungus and plant roots, where the fungus helps the plant absorb nutrients?

- A) Pollination
- B) Mycorrhiza**
- C) Epiphytism
- D) Parasitism

7. The chemical equation for photosynthesis is often summarized as: Carbon Dioxide + Water + Light Energy -> Glucose + Oxygen. What is the role of glucose in plants?

- A) It is a waste product released into the atmosphere
- B) It is the primary pigment for light absorption
- C) It serves as an energy source and building block for plant growth**
- D) It is used to attract pollinators

8. What is the term for the protective outer layer of cells on a plant stem or leaf?

- A) Cortex
- B) Endodermis
- C) Pith
- D) Epidermis**

9. Which type of plant reproduction involves the fusion of male and female gametes?

- A) Asexual reproduction
- B) Vegetative propagation
- C) Sexual reproduction**
- D) Apomixis

10. The process by which seeds germinate and begin to grow into new plants is known as:

- A) Pollination
- B) Fertilization
- C) Germination**
- D) Senescence

11. What is the main function of the phloem in plants?

- A) To transport water and minerals
- B) To provide structural support
- C) To transport sugars (produced during photosynthesis) to other parts of the plant**
- D) To store starch

12. Which plant hormone is primarily responsible for promoting cell elongation and growth, particularly in shoots?

- A) Absciscic acid
- B) Cytokinin
- C) Ethylene
- D) Auxin**

13. The phenomenon where plants grow towards a light source is called:

- A) Geotropism
- B) Hydrotropism
- C) Thigmotropism

D) Phototropism

14. What are the basic units that make up the structure of a plant's vascular system?

- A) Meristematic cells

B) Vascular bundles (containing xylem and phloem)

- C) Parenchyma cells
- D) Sclerenchyma cells

15. In flowering plants, what is the structure that develops into a fruit after fertilization?

- A) Petal
- B) Sepal

C) Ovary

- D) Stamen

16. Which of the following best describes a deciduous plant?

- A) A plant that has thorns for defense

B) A plant that loses its leaves seasonally

- C) A plant that grows on other plants
- D) A plant that reproduces through spores

17. What is the primary role of roots in most plants?

- A) To produce flowers for reproduction
- B) To absorb sunlight for photosynthesis

C) To anchor the plant and absorb water and nutrients from the soil

- D) To release oxygen into the atmosphere

18. The process of respiration in plants is essential for:

- A) Producing glucose from sunlight
- B) Releasing oxygen into the air

C) Breaking down glucose to release energy for cellular processes

- D) Absorbing carbon dioxide from the atmosphere