

Advanced Botany Concepts

Botany · Answer Key · 20 Questions

1. Which specialized plant tissue is responsible for the transport of sucrose from the leaves to other parts of the plant?

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

2. In the alternation of generations, what is the diploid stage of a moss plant called?

- A) Gametophyte
- B) Prothallus
- C) Sporophyte**
- D) Archegonium

3. Which plant hormone is primarily responsible for the ripening of fruit and the dropping of leaves?

- A) Ethylene**
- B) Gibberellin
- C) Cytokinin
- D) Auxin

4. What is the term for the waxy, waterproof layer on the surface of a leaf that reduces water loss?

- A) Stomata
- B) Cuticle**
- C) Mesophyll
- D) Epidermis

5. Which chemical compound is the primary byproduct released during the light-dependent reactions of photosynthesis?

- A) Carbon dioxide
- B) Glucose
- C) Oxygen**
- D) Adenosine triphosphate

6. In which part of the flower does the process of double fertilization occur?

- A) Stigma
- B) Anther
- C) Ovary**
- D) Filament

7. Which type of plant lacks true vascular tissue and reproduces via spores?

- A) Angiosperm
- B) Gymnosperm
- C) Bryophyte**
- D) Pteridophyte

8. What is the primary function of the root cap in a plant's root system?

- A) Absorption of water
- B) Storage of starch
- C) Protection of the apical meristem**
- D) Photosynthesis

9. Which process involves the movement of water vapor out of a plant's leaves through the stomata?

- A) Transpiration**
- B) Respiration
- C) Guttation
- D) Translocation

10. What are the specific openings on the underside of a leaf that allow for gas exchange?

- A) Lenticels
- B) Stomata**
- C) Trichomes
- D) Guard cells

11. Which class of plants is characterized by having seeds that are not enclosed within an ovary or fruit?

- A) Angiosperms
- B) Gymnosperms**
- C) Bryophytes
- D) Monocots

12. Which pigment is primarily responsible for absorbing blue and red light for photosynthesis?

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

13. What is the function of the endosperm in a seed?

- A) Protecting the embryo
- B) Providing nutrients to the developing embryo**
- C) Facilitating seed dispersal
- D) Regulating water intake

14. Which soil horizon contains the highest concentration of organic matter and is commonly known as topsoil?

- A) O horizon
- B) A horizon**
- C) B horizon
- D) C horizon

15. In plant cell division, what structure forms across the middle of the cell to eventually become the cell wall?

- A) Cleavage furrow
- B) Cell plate**
- C) Centrosome
- D) Spindle fiber

16. Which group of plants is known for having parallel leaf venation and floral parts in multiples of three?

- A) Dicots
- B) Monocots**
- C) Gymnosperms
- D) Pteridophytes

17. What is the term for a plant that completes its life cycle within a single growing season?

- A) Perennial
- B) Biennial
- C) Annual**
- D) Deciduous

18. Which plant tissue is responsible for secondary growth, increasing the diameter of woody stems?

A) Apical meristem

B) Vascular cambium

C) Ground tissue

D) Dermal tissue

19. Which mineral element is a central component of the chlorophyll molecule?

A) Magnesium

B) Iron

C) Calcium

D) Potassium

20. What is the specialized root structure in parasitic plants that penetrates the host tissue to extract nutrients?

A) Rhizome

B) Tuber

C) Haustorium

D) Stolon