

What is Plant Structure and Function?

Worksheet

Plant structure refers to the arrangement of roots, stems, leaves, flowers, and fruits; function describes what each part does. Roots absorb water, stems transport and support, leaves make food via photosynthesis, and flowers/fruits enable reproduction.

Questions

1. Which plant organ primarily absorbs water?

- A) Leaves
- B) Stem
- C) Roots
- D) Flowers

2. What does xylem transport?

- A) Sugars downward
- B) Water and minerals upward
- C) Oxygen only
- D) Pollen and spores

3. What is phloem?

- A) A root structure
- B) A vascular tissue that transports sugars
- C) A type of leaf
- D) A flower part

4. Which tissue provides structural support in herbaceous stems?

- A) Cork
- B) Collenchyma and parenchyma
- C) Xylem
- D) Pith

5. A plant has roots that extend 30 cm deep and a stem that grows 15 cm tall. What is the total length of root + stem?

6. A leaf has 5 main veins. If each vein contains 20 smaller venules, how many total venule pathways are there?

7. A root system has a main taproot and 8 lateral roots. What fraction of the root system are lateral roots?

8. Define: What are the main functions of roots?

9. Define: What is a taproot?

10. Define: What do stems do?

Answer Key

1. C) Roots - Roots extend into the soil and absorb water through root hair cells.
2. B) Water and minerals upward - Xylem vessels carry water and dissolved minerals from roots to leaves.
3. B) A vascular tissue that transports sugars - Phloem is the living vascular tissue that transports photosynthesis products (sugars) throughout the plant.
4. B) Collenchyma and parenchyma - Collenchyma (flexible walls) and parenchyma (packing tissue) provide support in young, green stems.
5. Root depth = 30 cm Stem height = 15 cm Total = 30 + 15 = 45 cm
6. Veins = 5 Venules per vein = 20 Total venules = 5 20 = 100
7. Total roots = 1 (main) + 8 (lateral) = 9 Lateral roots = 8 Fraction = $\frac{8}{9}$ 0.89 or 89%
8. Absorb water and minerals from soil, anchor the plant, and store nutrients.
9. A large central root that grows deep into soil, found in plants like carrots and dandelions.
10. Transport water and nutrients (xylem and phloem), support leaves and flowers, and grow toward light.

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