## CHAPTER TEST B

**Multiple Choice** **1.** a **2.** c **3.** d **4.** c **5.** d **6.** b **7.** d **8.** a **9.** d **10.** b **Completion** **1.** root hairs **2.** blade **3.** evaporation **4.** nitrogen **5.** phloem tissue **True or False** **1.** F, taproots **2.** F, active transport **3.** T **4.** F, vascular bundles **5.** T **Using Science Skills** **1.** between 11 A.M. and 1 P.M. **2.** The larger the stomata openings, the greater the water loss (a positive relationship). **3.** 6 A.M. **4.** around 6 P.M. **Essay** **1.** In monocot stems, pith is distributed throughout the stem. In dicot stems, a core of pith is in the center of the stem and is surrounded by layers of xylem. **2.** Tubers are thick underground stems. Rhizomes are thick, fleshy stems that grow along the surface or just beneath the ground. Bulbs have a small stem at the center surrounded by short, thick leaves. Corms have thin, papery leaves surrounding a stem in which food is stored. **3.** The stomata open and close in response to changes in water pressure within the guard cells from which they are formed. When water pressure within the guard cells is high, the walls of the cells are forced into a curved shape. This pulls the thick inner walls of the guard cells away from each other, allowing the sto-

mata to open. When water pressure within the guard cells decreases, the springiness of the inner walls pulls them together, closing the stomata. **4.** In osmosis, water moves across a membrane from an area of high concentration of water molecules to an area of low concentration of water molecules. Because there is a higher concentration of water molecules in soil spaces than in the cytoplasm of the roots, the water moves by osmosis from the soil spaces across the root hairs into the cytoplasm of the roots. **5.** Tracheids are long, narrow cells with walls that are impermeable to water. These walls are pierced by openings that connect neighboring cells to one another. When tracheids die, their cytoplasm disintegrates, leaving a network of hollow connected cells through which water can pass. Vessel elements also mature and die before they conduct water. Vessel elements are arranged end to end on top of one another. The cell walls at both ends are lost when the cells die, leaving continuous tubes through which water can move freely.