GENERAL BIOLOGY Lecture 22 - Plants: Morphology & Anatomy

I. What is a plant? (refer to flow chart)
II. General morphology
  A. Leaves - photosynthesis, transpiration
    1. Types: simple vs. compound
    2. Shape: entire (smooth), dentate (toothed), and lobed (indented)
  B. Stems - support
    1. Nodes: swelling where leaves, buds, and branches arise
    2. Internodes: points between nodes
    3. Buds: gives rise to new stems and flowers
  C. Roots - absorption of nutrients
  D. Flowers - angiosperms
    1. Male parts - (stamen) anther and filament
    2. Female parts - (pistil) stigma, style, and ovary
III. Special features of angiosperms - monocots and dicots
  A. Dicotyledonae
    1. "Two cotyledons in seed"
    2. Broadleaf plants
    3. Netlike leaf veins - xylem and phloem
    4. Two leaf parts (sometimes three)
      a) Blade (leaf)
      b) Petiole - pelate (attaches to middle) and sessile (direct attachment)
        1) Extends the leaf
        2) Allows leaf to move
      c) Stipule - at base of petiole
    5. Flower parts usually come in units of four or five
  B. Monocotyledonae
    1. "One cotyledon in seed"
    2. Long, grasslike leaves
    3. Parallel leaf veins
    4. Two leaf parts (sometimes up to four)
      a) Blade
      b) Sheath - covers stem
      c) Ligule - keeps water from between stem and sheath
      d) Auricle - forms a collar at base of blade
    5. Flower parts usually come in units of three
    6. Grass flowers (among monocots) are often incomplete or inconspicuous
      a) Lacking or not showing sepals or petals
IV. Types of growth
  A. Primary - all plants
  B. Secondary - woody growth (mostly dicots)
V. Tissue types (refer to flow diagram)