

1. How are the activities of professional plant taxonomists different from the field ecologist or land manager who performs a plant inventory prior to recommending a conservation plan?
2. Describe the general structure of a dichotomous taxonomic key and describe how you would go about constructing one. Include mention of “common features” and “distinguishing characteristics.” How is “key-making” similar to “classification?”
3. According to Murrell, Chapter 1, the text is written for courses that seek to teach students how to be proficient in two skill areas. What are they?
4. Based upon Question #3, what benefits are possible for you in studying plant taxonomy?
5. List and discuss at least 3 different areas in which plant taxonomy is valuable to society.
6. Why is it essential that cataloging of plant and animal species continue in areas of the world that are in danger of being destroyed? Indeed, how might cataloging serve to prevent destruction? Is there at least one principle that could be derived from this issue?
7. Be able to show how you have learned to access plant taxonomic information such as the following:
  - a. Listing of genera of each plant family (e.g. by your “Bookmarks” in your web browser, or at BIO 3520 “Useful Internet Sites”, see “Finding Taxa by Subclass or Family”)
  - b. Listing of invasive species in your home state. (e.g. “USDA Plants Database”)
  - c. Determine the authenticity of a given genus name or if it has been changed in the past
  - d. Online winter twig key or key to woody plants in the Cedarville area
8. Given two complete scientific names (all three parts of the name present) of a species of plant, one reported as a *later homonym*:
  - a. Identify each part of the names
  - b. Indicate which name should have precedence
  - c. Explain your decision.
9. Define: type specimen holotype isotype type genus distinguishing character
10. Distinguish a *taxonomic synonym* from a *nomenclatural synonym*.
11. Given the hierarchical names of the plant taxa within which the species *Acer saccharum* is classified, arrange them in the proper order based upon familiarity with the suffixes for each taxon name. See question #1 of the Exercise in Chapter 2 of Murrell.
12. How are taxon names valuable in biological information storage and retrieval? Be specific.
13. Given a series of two or more characters and character states for common woody plant species, can you identify the species or in some cases the genus to which they belong?