What Are the Main Characteristics of Fungi?

1. Be able to explain, in general terms, the difference between the 3 theories of how the first multicellular organisms arose. Which theory is widely accepted by biologists?

2. Know the basic structure and function of the mycelium and where it is located relative to fruiting bodies of the fungus.

3. Regarding hyphae:
   - What is their cellular structure?
   - What are their cell walls made of?
   - How do they digest and absorb nutrients?

3. Be able to explain the advantages and disadvantages to an organism of asexual vs. sexual reproduction.

4. What is the role of spores in fungal reproduction and how/where are asexual spores produced?
5. What is the role of fruiting bodies in fungal reproduction? Are they used in sexual or asexual processes?

6. Be able to describe how different fungi use air or water to disperse their spores. What is different about spore dispersal in truffles?

7. What are yeasts and how does their asexual reproduction differ from that of other fungi?

8. Explain the following heterotrophic means of obtaining nutrition found in fungi and give an example of each:
   - decomposition
   - predation
   - parasitism

9. Regarding the close association formed by many fungal species with plants or algae:
   - Describe the structure of mycorrhizae and indicate the benefits to both the fungus and the plant; why do plants grow faster when mycorrhizae are present?

   - Describe the structure of a lichen and indicate the benefits to both the fungus and its partner; what two groups of organisms can partner with fungus?

10. Describe, in general terms, the partnership between a particular fungus and leaf-cutter ants.