

Due Thursday February 26, 2009. (Please hand in before class on Thursday)

1. A clade is a (please circle one)
 - A. Natural clustering of species that share a common ancestry**
 - B. Group of organisms that exhibits homologous traits with another group
 - C. Group of organisms containing only primitive traits
 - D. Both A and B
 - E. Both A and C

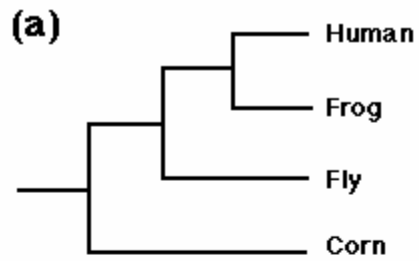
2. Some people can manipulate their ear muscles to move their ears slightly. These muscles can be referred to as: (circle one)
 - A. Homologous structures
 - B. Mutational structures
 - C. Evolutionary structures
 - D. Vestigial structures**

3. The so-called tree of life produced by evolutionary branching is known more formally as ___ **Phylogenetic Tree of All Life** ___ [hint: see your READING].

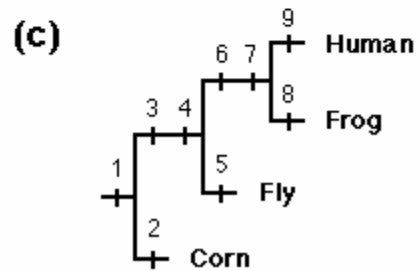
4. From the least encompassing, the major groups in the taxonomic hierarchy are:
 - A. Kingdom, phylum, order, class, family, genus, species
 - B. Phylum, kingdom, class, order, family, genus, species
 - C. Kingdom, group, class, order, family, species, genus**
 - D. Kingdom, phylum, class, order, family, genus, species

5. On the other side of this sheet is a simple cladogram. As mentioned in lecture, each cluster (branch) represents a postulated clade or monophyletic group, a group comprised of all the sampled descendants of a single ancestral lineage. On the cladogram on the back of this page, you are given a set of uniquely derived traits for each group to put into the phylogenetic tree. Please fill in the blanks on the tree with the appropriate synapomorphies.

A simple morphology-based cladogram:



(b)
 (Corn (Fly (Frog, Human)))



Match the following with the divergence event number in the phylogenetic tree in C (above).

Here's an example

- A. cell nucleus 1
- B. mammary glands 9
- C. eyes 4
- D. nervous system 3
- E. flight 5
- F. photosynthesis 2
- G. endoskeleton 6 (or 7)
- H. spinal chord 7 (or 6)
- I. webbed feet 8