Common Ancestry and Evolutionary Relationships in Phylogenetic Trees & Cladograms

I. Phylogeny =

A. = study of evolutionary relationships among species, individuals, or genes

B. Phylogenetic Tree

a. Visual model of **inferred evolutionary relationships**

b. Diagrams that show how groups **branch off** from **other groups**

C. Parts of a Phylogenetic Tree

a. Tips of Branches =

b. Close Branches =

c. Phylogenetic trees show a (group of organisms that includes an and *all* of that ancestor.)

d. is like a on the tree of life.

II. Cladogram

A. of organisms based on characteristics that can be traced to a most recent common ancestor but are present in more distant ancestors.

B. How are cladograms constructed?

a. Organisms are grouped together based on their shared

(trait modified from the ancestral trait).

b. The points at which are called .

c. Nodes represent a .

d. Cladograms are used to organize organisms based on evolutionary relationships ( ).

e. Show who is more to whom and how close their relatives are.