Quiz 8: Reading Phylogenetic Trees

Due Mar 19 at 11:59pm **Points** 9 **Questions** 9
Available until Mar 20 at 2am **Time Limit** 120 Minutes
Allowed Attempts 2

Instructions

You have 2 attempts at this quiz. The highest marks counts. You have 60 minutes to complete this quiz.

New: This quiz is due on Sunday, March 19th @ 11:59 pm

Targeted Readings - Species Concepts, Speciation & Phylogenetic Trees.pdf (https://canvas.ubc.ca/courses/105572/files/24667407?wrap=1) (https://canvas.ubc.ca/courses/105572/files/24667407/download?download_frd=1)

This quiz was locked Mar 20 at 2am.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	11 minutes	9 out of 9

Score for this attempt: **9** out of 9
Submitted Mar 10 at 2:08pm
This attempt took 11 minutes.

Question 1 — 1 / 1 pts

What is a clade?

Correct!

- (●) The same as a monophyletic group; a common ancestor and all of its decendents.
- ( )

A trait that certain groups of organisms have that exists in no others.

A characteristic that existed in the common ancestor.

The same as a phylogeny; a group of related taxa.

Question 2

1 / 1 pts

Phylogenetic trees have a number of structural components. Match each term (e.g., node, tip, etc.) to its definition.

Correct! **Node** — A point on a phylogeny w

Correct! **Tip** — A terminal species, popul

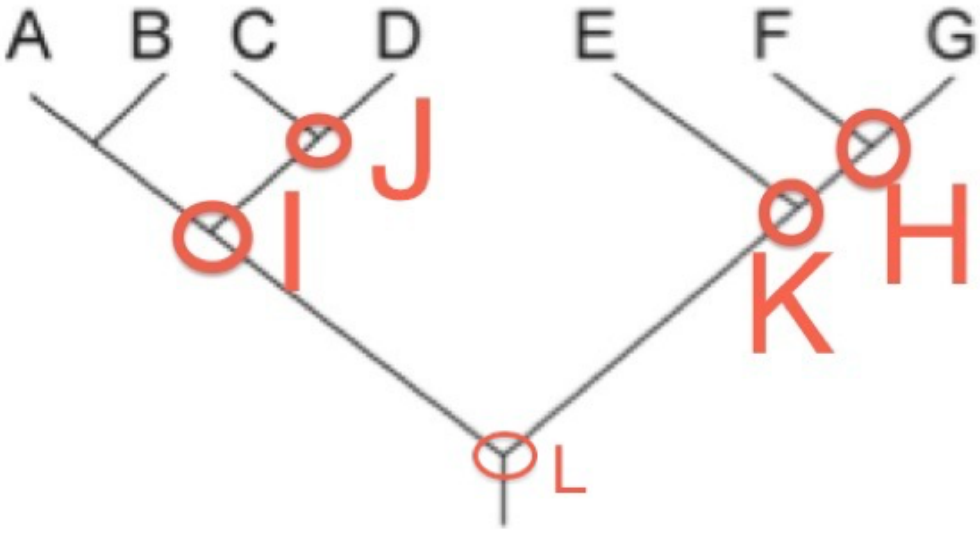
Correct! **Root** — Ancestral population fron

Correct! **Branch** — A lineage (a continuous lir

Question 3

1 / 1 pts

In the phylogenetic tree shown below, what does the node labeled with "K" represent?



A characteristic that differentiates species E from species F and G

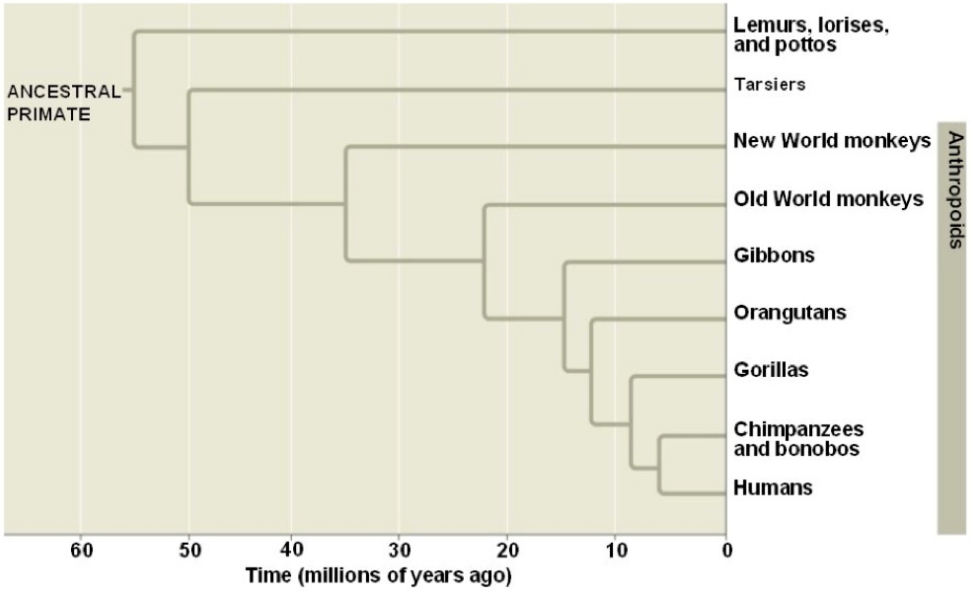
Correct!

- [x] The most recent common ancestor of species E and H.
- [ ] The most recent common ancestor of species F and G.
- [ ] A monophyletic group with E, F, G and H

Question 4

1 / 1 pts

Below is a phylogenetic tree showing the hypothesized genealogical relationships among currently existing primates (take a look at them and keep scrolling down to see the true/false statement).



Based on the phylogenetic tree above, gorillas are more closely related to humans than to orangutans.

Correct!

- (•) True
- ( ) False

Correct. Gorillas and humans share a more recent common ancestor than gorillas and orangutans; therefore, gorillas and humans are more closely related to each other than gorillas and orangutans are.

Question 5

1 / 1 pts

Based on the phylogenetic tree above, new world monkeys are more closely related to lemurs than to chimpanzees.

Correct!

- ( ) True
- (•) False

Correct. New world monkeys and chimps have a more recent common ancestor than new world monkeys and lemurs.

Question 6

1 / 1 pts

The phylogenetic tree above shows us that the group “monkeys” (i.e., all the new world monkeys, plus all the old world monkeys) is a monophyletic group.

- True
- False

Correct!

Correct. A monophyletic group is a group of taxa (in this case, the old world and new world monkeys), *plus* their most recent common ancestor, *plus* all of the descendants of this common ancestor (which in this case would include gibbons, orangutans, gorillas, chimpanzees, and humans).

Question 7

1 / 1 pts

The figure below shows another phylogenetic tree of primates. "Prosimians" includes lemurs and tarsiers. On this tree, bonobos and chimps are shown as separate taxa, instead of as one.

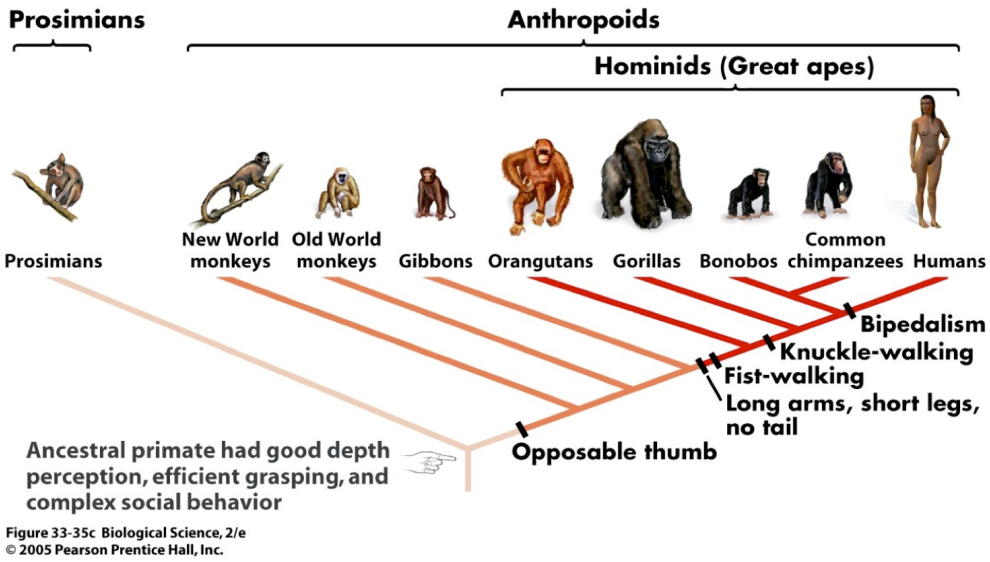


Figure 33-35c Biological Science, 2/e

True or false?: Based on this tree, gibbons are more primitive than gorillas.

- True
- False

Correct!

"Primitive" implies that the species, in its current form, has existed for a longer period of time (i.e., the species that is currently alive is very similar to the ancestor at the closest node).Based on this tree, we have no idea when either gibbons or gorillas first existed in their current forms – we only know when (in a relative sense) they diverged from common ancestors.

Question 8

1 / 1 pts

Based on the phylogenetic tree above, gorillas evolved from orangutans.

- True

Correct!

False

Correct. Gorillas and orangutans are both extant (i.e., currently living species) – neither one is the ancestor of the other. The only way a phylogenetic tree could tell us which species was the common ancestor would be if the relevant node were labelled with a species name.

Question 9

1 / 1 pts

Based on the phylogenetic tree above, humans are more closely related to chimps than to bonobos.

True

Correct!

False

Correct! Humans are equally related to chimps and bonobos based on this tree, because humans share the same most recent common ancestor with both (remember that you can rotate branches around nodes – as long as the nodes are still in the same place, it's the same tree).

Quiz Score: **9** out of 9