Name_____Per__

CHAPTER 25: PHYLOGENY AND SYSTEMATICS

1. What is phylogeny?_____

_____

2. How are fossils significant to our study of biology?_____

_____

3. List several ways fossils form _____

_____

4. What types of organisms are most likely to appear in the fossil record?_____

_____

5. Why is the fossil record incomplete?_____

6. Which was the longest era in time? Describe this era._____

_____

7. What era, period and epoch are we in now? _____

8. How does absolute dating compare to relative dating? _____

_____

_____

9a. A fossil has 1/8 of the normal ratio of C-14 to C-12. Estimate the age of this fossil (half life of C-14 = 5,600yrs)

b. Potassium-40 has a half-life of 1.3 billion years. If an organism has 1mg of potassium-40 when it died and its fossil has 0.25mg, how old is this fossil?

10. How could the formation and break up of Pangea have an impact on mass extinctions and adaptive radiations?

_____

_____

11. Define adaptive radiation

12. Describe the evidence for the mass extinction of the cretaceous

13. What marks the separation between the major eras in the geologic time scale?

14. Marsupials evolved in what is now North America, yet their greatest diversity is found in Australia. How can you account for this biogeographical distribution?

15. Why do extensive adaptive radiations often follow mass extinctions?

16. List the major taxonomic categories from most to least inclusive.

17. Why are scientific names used? Who developed them?

18. Distinguish between homologous and analogous structures.