

Seventh Grade Science
Geologic Time Scale: Earth's History Test

Name: _____

Date: _____

Answer the following questions about the Geological Time Scale from your text.

1. How many periods make up the Paleozoic Era? _____
2. What period is associated with the evolvement of land plants? _____
3. What occurred first: Triassic or Jurassic? _____
4. In what period did birds evolve? _____
5. Which is older: Silurian, Cambrian or Permian? _____
6. How long was the Mesozoic Era? _____
7. Which mass extinction was worse: the Permian or Cretaceous? _____
8. What does the "Age of Fish" mean? _____

Multiple Choice Questions- Write the letter for your choice on the line or lose credit.

9. _____ Geologists mark the division of the Geologic Time Scale by:
a. same length of time b. fossil records c. rock evidence
10. _____ What marked the beginning of the Cambrian Explosion
a. explosion of volcano b. explosion from asteroid c. explosion of life
11. _____ Which statement below does NOT explain what the Geologic Time Scale is:
a. a visual record of Earth's history based on fossil and rock records
b. it is permanent and cannot be changed even if new fossils are discovered
c. created by scientist to better understand how Earth has changed over time
12. _____ The Principle of Superposition used in relative dating of rock layers states:
a. states that the oldest rocks are at the top of an undisturbed rock layer
b. states that the oldest rocks are mixed together with newer rocks
c. states that the oldest rocks are at the bottom of an undisturbed rock layer
d. states that an intrusion is always younger than the rock layers it cuts through

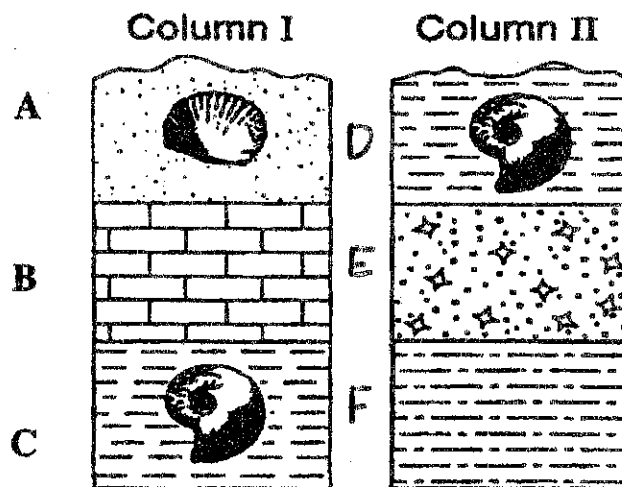
13. ____ These special elements found in rocks change over time and can be used to calculate the age of rocks:
- only hydrogen and helium
 - radioactive decaying elements
 - iron and magnesium
14. ____ Which has not contributed to Earth's surface changing over time:
- asteroid impacts
 - mountain building
 - volcanic activity
 - animal activity
15. ____ What is the longest unit of time in the Geologic Time Scale:
- eon
 - epoch
 - era
 - period
16. ____ These are thought to be the earliest life forms on Earth and are responsible for putting Oxygen into our atmosphere:
- trilobites
 - jellyfish
 - cyanobacteria
 - fish
17. ____ In radioactive decaying atoms, what happens over time to parent atoms?
- the decay and form daughter atoms
 - they multiply with daughter atoms
 - they equal the # of daughter atoms
 - they remain stable to form more daughter atoms

Answer the following questions about the picture of the two columns:

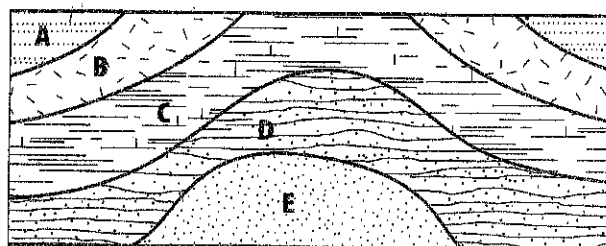
18. Looking at the fossil evidence; which two layers are the same age? ____
19. Which layer is then oldest? ____
20. Which layer is the youngest? ____

Look at the illustration to the right to answer the following questions:

21. In relative dating, which layer is the oldest? ____
22. Which layers is the youngest? ____
23. What has happened to this rock layers to make it curve?
- _____



Use the figure below to answer questions



Short Answer Questions: Use the word bank provided

asteroid impacts fossils mass extinctions oceans
extinct half-life single-celled volcanic eruptions

24. The preserved remains of organisms are called _____.
25. Earliest life formed in the _____.
26. Species that cannot adapt to environment changes will go _____.
27. Asteroid impacts can cause global cooling and _____.
28. _____ organisms were the first living things on Earth.
29. _____ & _____ of elements made early Earth hot!
30. _____ is the time required for half of the amount of a radioactive unstable parent atom to decay into a stable daughter atom.

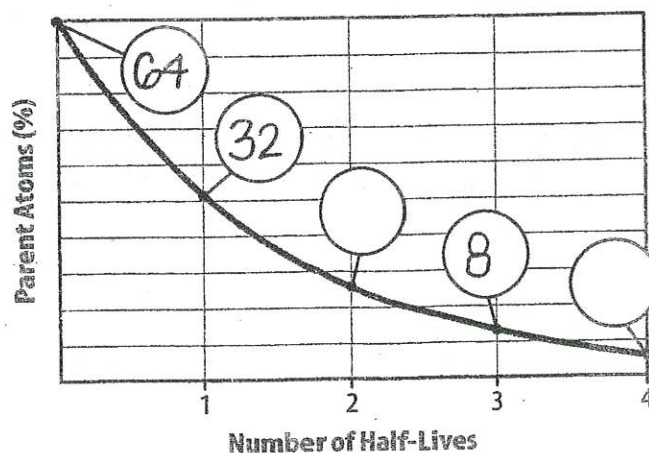
Answer the following about Absolute Dating and radioactive decaying elements:

The diagram below shows a rock sample starting with 100% parent element atoms

31. After one half-life; how much of the parent atoms are there: _____

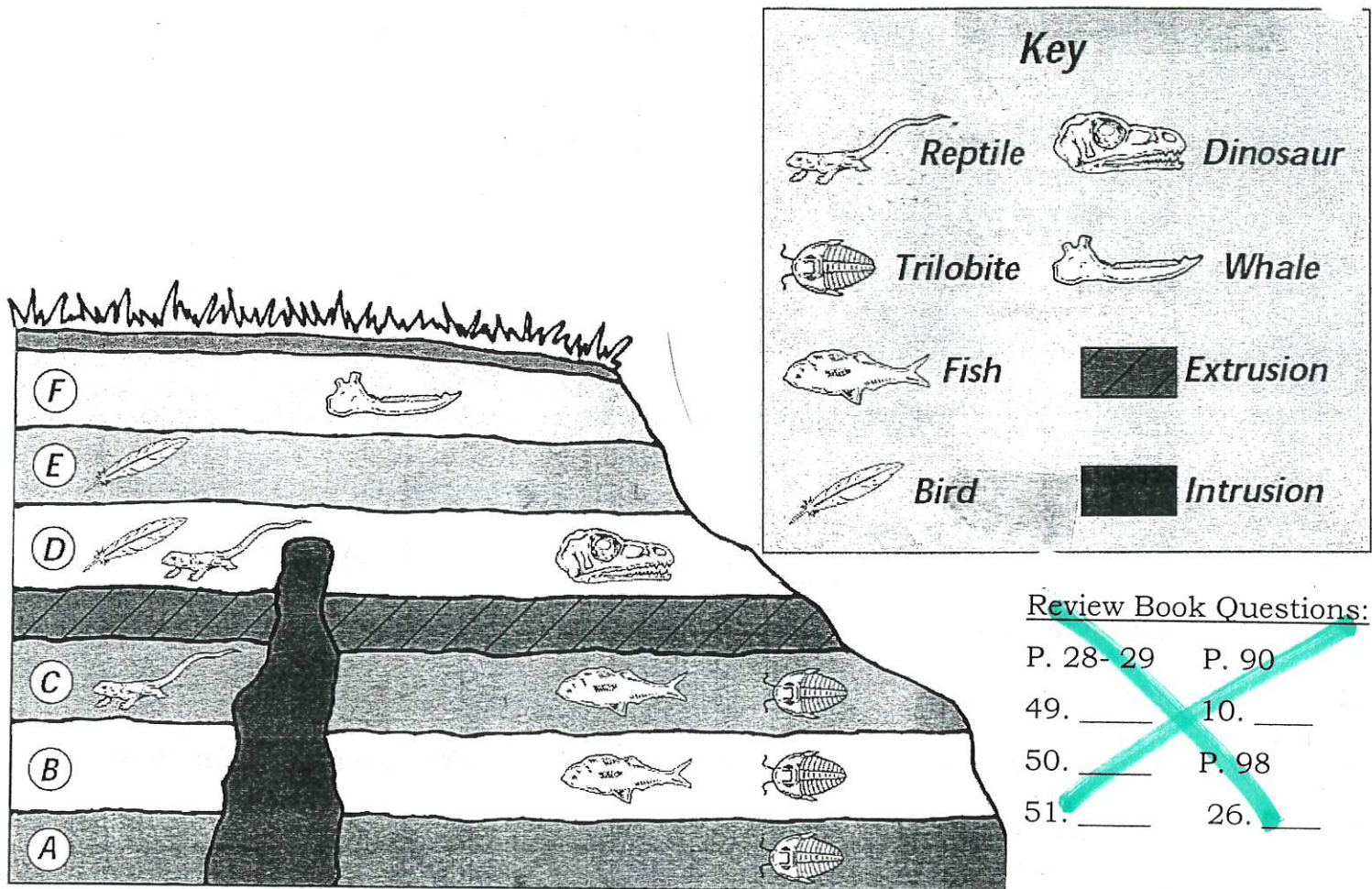
32. At what half-life is there only 8% of parent atoms left in the rock sample? _____

33. Fill in the missing amount for two half-lives: ----->



34. Fill in the missing amount for the parent atoms at 4 half-lives: ----->
35. A radioactive element decays at a (constant or increasing) rate of time. (circle one)
36. The half-life of an element is a measurement of (radiation, time) (circle one)

Use the following Rock Layers to answer the questions below:



37. In what layer are trilobites the only living organisms found to exist? _____
38. Based on the fossil evidence which lived first: (circle) reptiles or birds
39. After what layer did trilobites die off? _____
40. Which layer is older based on the Principle of Superposition: (circle) C or E
41. Which were alive first: (circle) dinosaurs or reptiles
42. In what two layers is there the greatest diversity of fossils? _____
43. Which species do you think are older based on the fossil record: whales or fish
44. What species appears in only one rock layer before going extinct: _____
45. In Layer B what two fossils were found? _____ + _____

How Scientists Organize Earth's History

Figure 5 ✎ This timeline shows major events in Earth's history. It is a model that you can use to study events that occur over geologic time. (Note that, to make the timeline easier to read, periods are not drawn to scale.) Circle the periods during which mass extinctions occurred.

Events	Period	Began (Millions of Years Ago)	
Earth forms. First single-celled and multi-celled organisms evolve.		4,600	PRECAMBRIAN TIME
"Explosion" of new forms of life occurs. Invertebrates such as trilobites are common.	Cambrian	541	PALEOZOIC ERA
First vertebrates, insects, and land plants evolve.	Ordovician	485	
Early fish are common in seas.	Silurian	444	
"Age of Fish" occurs, with many different kinds of fish. Lungfish and amphibians first reach land.	Devonian	419	
Appalachian Mountains form. Reptiles and giant insects evolve. Ferns and cone-bearing plants form forests.	Carboniferous	359	
Pangaea forms. Mass extinction kills most species.	Permian	299	
Reptiles flourish, including the first dinosaurs. First mammals evolve.	Triassic	252	MESOZOIC ERA
Dinosaurs become common. First birds evolve.	Jurassic	201	
Dinosaurs are widespread. Birds begin to replace flying reptiles. Flowering plants appear. Mass extinction occurs.	Cretaceous	145	
Mammals flourish. Grasses first spread widely.	Paleogene	66	CENOZOIC ERA
The Andes and Himalayas form. Some mammals and birds become very large.	Neogene	23	
Ice ages occur. Many kinds of animals thrive. First modern humans evolve.	Quaternary	2.6	