
 Chapter
Test

Clues to Earth's Past

I. Testing Concepts

Directions: Match the terms in Column I with their descriptions in Column II. Write the letter of the correct descriptions in the blank at the left.

Column I

- _____ 1. cast
- _____ 2. carbonaceous film
- _____ 3. index fossils
- _____ 4. fossil
- _____ 5. half-life
- _____ 6. principle of superposition
- _____ 7. absolute dating
- _____ 8. mold
- _____ 9. radioactive decay
- _____ 10. relative dating
- _____ 11. unconformities
- _____ 12. radiometric dating
- _____ 13. uniformitarianism
- _____ 14. permineralized remains

Column II

- a. produced when sediments fill in a cavity made when an object decayed
- b. cavity in rock made when an organism decayed
- c. principle that Earth's processes occurring today are similar to those that occurred in the past
- d. process that uses the properties of atoms in rocks and other objects to determine their ages
- e. states that in a sequence of undisturbed rocks, the oldest rocks are on the bottom and the rocks become progressively younger toward the top
- f. gaps in rock records made when agents of erosion remove existing rock layers
- g. method by which a geologist can calculate the absolute age of the rock by knowing the half-life of an isotope
- h. time it takes for half of an isotope's atoms to decay
- i. fossil of thin layer of carbon atoms and molecules
- j. formed when original materials in skeletal remains are replaced by minerals
- k. method by which order of events or age of rocks is determined by examining the position of rocks in a layer
- l. remains, imprints, or traces of once-living organisms
- m. process that occurs when the number of protons in an atom is changed and a new element is formed
- n. fossils of species that existed for short periods and were widespread

Chapter Test (continued)

Directions: Determine whether each of the following statements is true or false. Write **true** or **false** in the blank. Rewrite each false statement to make it true.

_____ 15. A fossil may tell a geologist when, where, and how an organism lived.

_____ 16. A permineralized bone is composed of calcium.

_____ 17. The soft parts of organisms are most likely to become fossils.

_____ 18. Preserved animal tracks are trace fossils.

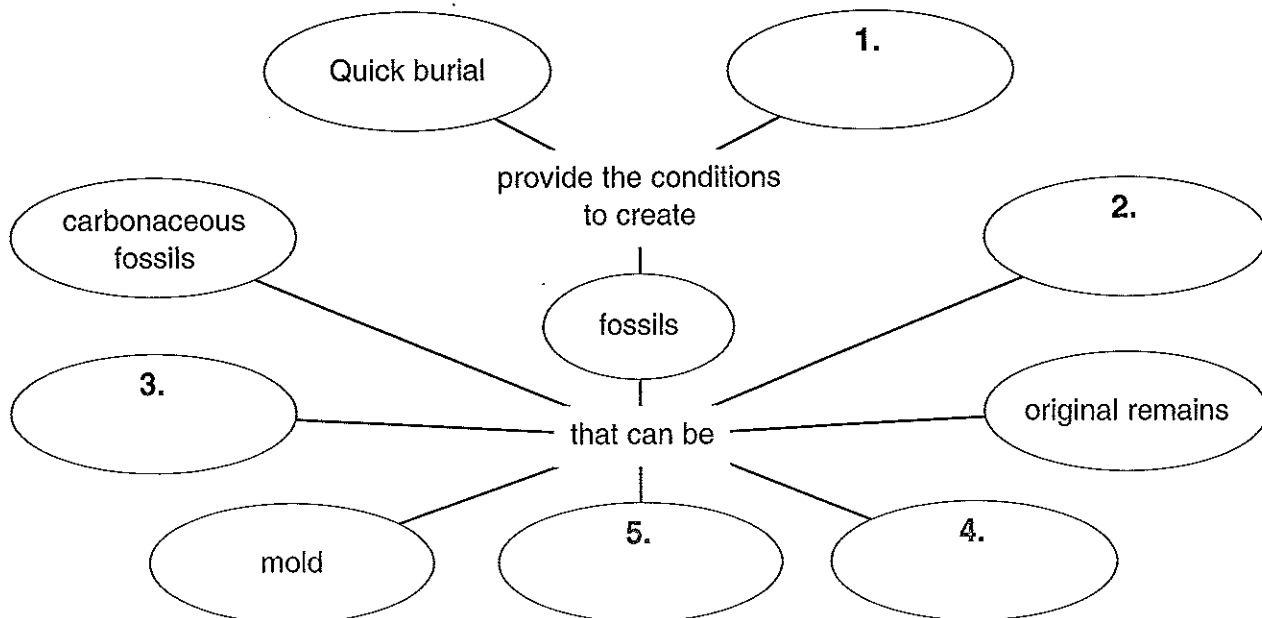
_____ 19. Only a radioactive isotope will have a half-life.

_____ 20. Any fossil can be dated by the amount of carbon-14 it contains.

II. Understanding Concepts

Skill: Concept Mapping

Directions: Complete the concept map below by writing the conditions for fossil formation and the types of fossils in the circles.

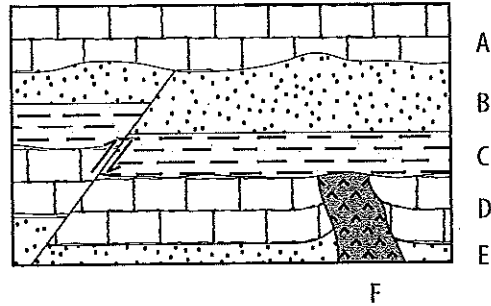
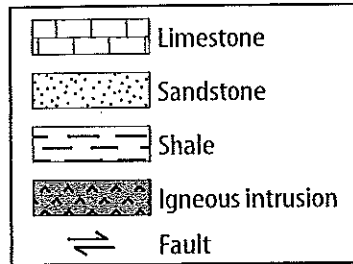


Chapter Test (continued)

6. What is the difference between relative and absolute dating?

Skill: Interpreting Data

Directions: Study the figure of the rock record. Then answer the questions on the lines provided.



7. List events A–F in the order they occurred, beginning with the oldest event.

8. When did the fault occur?

Skill: Using Tables

9. Complete the table below to show the amounts of parent and daughter materials left of a radioactive element after three half-lives if the original parent had a mass of 80 g.

Number of half-lives	Parent material	Daughter product
1		
2		
3		

III. Applying Concepts

Writing Skills

Directions: Answer the following questions using complete sentences.

1. If horizontal layers of sedimentary rock have a vertical fault running through them, how might a geologist use relative dating to determine when the fault occurred?

Chapter Test (continued)

2. Explain how a trace fossil can provide information on how an organism lived.

3. Explain what is meant by correlating rock layers.

4. Do all rocks contain fossils? Describe the conditions necessary for fossils to form.

5. Explain what the term *half-life* means and how knowing the half-life of an isotope can help a geologist establish the age of a rock or fossil.
