

# Homework – interpreting scientific



1. What is the commonly accepted age of Earth?

- a. 4. 6 million years
- b. 46 million years
- c. 4. 6 billion years
- d. 46 billion years

2. Which of the following was not a source of heat for the early Earth?

- a. meteor bombardment
- b. gravitational contraction
- c. radioactivity
- d. hydrothermal energy

3. What are small asteroids called?

- a. comets
- b. meteoroids
- c. cratons
- d. microcontinents

4. What is the process by which a planet becomes internally zoned when heavy materials sink toward its center and lighter materials accumulate near its surface?

- a. photosynthesis
- b. dewatering
- c. accretion
- d. differentiation

5. Where is most of the North American Precambrian shield exposed at the surface?

- a. Canada
- b. Minnesota
- c. Wisconsin
- d. Michigan

6. What mineral can be used to radiometrically date Earth's age?

- a. zircon
- b. quartz
- c. hematite
- d. feldspar

7. Refer to Figure 22-6. What name is given to the core of the modern-day North American continent that formed in the Proterozoic?

- a. Baltica
- b. Yavapai
- c. Grenville
- d. Laurentia

8. What is the name of the first supercontinent, which formed near the end of the Proterozoic?

- a. Laurentia
- b. Grenville
- c. Rodinia
- d. Pangaea

9. What volcanic process most likely formed Earth's atmosphere?

- a. differentiation
- b. outgassing
- c. crystallization
- d. photosynthesis

10. Why is ozone a necessary component of Earth's atmosphere?

11. Why is Earth's atmosphere rich in nitrogen (N) and carbon dioxide today?

12. Rearrange the following phrases to create a cycle map that describes the formation of Earth's early crust. fl. earthgeu. com/chapter\_test

13. Explain how geologists have determined the age of Earth.

14. Discuss the relationships among the formation of the continents, the atmosphere, and the oceans.

15. What is the geologic significance of banded iron formations?

16. What geologic evidence suggests that free oxygen was accumulating in Earth's atmosphere during the Proterozoic?

17. What is the difference between prokaryotes and eukaryotes? Which appeared first in the fossil record?

18. What characteristics of continental crust allow it to "float" higher on the mantle than oceanic crust?

19. Why are orogens deformed?

20. What is the significance of the Ediacara fauna?

21. Discuss the evidence that suggests that most members of the Ediacara fauna were immobile.

22. Explain how the production of oxygen through photosynthesis by cyanobacteria affected the composition of the atmosphere and the development of other organisms.

23. A rock sample from Mars is reported to contain fossil evidence of life. What kind of fossil would you expect it to be? Explain your answer.

24. Where in North America would you look if you wanted to find evidence of Archean life? Explain your answer.

25. When making a map of geologic age provinces, as you did in the Mapping GeoLab in this chapter, why did you draw the lines between the data points instead of connecting them?

26. How might Earth's surface be different if water vapor had not been a product of outgassing?

1. Which of the following is NOT a likely source of the Precambrian Earth's heat?

- a. radioactivity
- b. asteroid impact
- c. increased solar activity
- d. gravitational contraction

2. What does orogeny refer to?

- a. the drifting of microcontinents
- b. the building of mountain ranges
- c. the formation of volcanic islands
- d. the breaking apart of the supercontinents

3. Which of the following was NOT a source of information about the early presence of oxygen on Earth?

- a. red beds
- b. banded iron formations
- c. stromatolites
- d. meteorites

### **INTERPRETING SCIENTIFIC ILLUSTRATIONS**

Use the diagrams to answer questions 4 and 5.

4. How do members of Group A differ from members of Group B?

- a. They belong to the Kingdom Plantae.
- b. They can be found in Proterozoic fossils.
- c. They contain no nuclei.
- d. They are all unicellular.

5. Where did members of Group B probably originate?

- a. glaciers
- b. hydrothermal vents
- c. Australian fauna
- d. oil deposits