

Self-test: The Atmosphere (CH 17)**Completion**

Complete each statement.

1. The gases _____ and _____ make up 99 percent of the volume of clean, dry air.
2. Ozone is concentrated in the layer of the atmosphere called the _____.
3. _____ are airborne particles and gases that occur in concentrations large enough to endanger the health of organisms.
4. Water vapor is the source of all clouds and _____.
5. _____ is the movement of Earth in its orbit around the sun.
6. _____ is the spinning of Earth about its axis.
7. Earth's axis is tilted _____ degrees from the perpendicular.
8. Temperature is a measure of the average _____ of the individual atoms or molecules in a substance.
9. Heat flows from matter with _____ temperatures to matter with _____ temperatures.
10. For the atmosphere as a whole, _____ is the least important mechanism of heat transfer.
11. _____ occurs when light bounces off an object.
12. A(n) _____ is any factor that causes temperature to vary from place to place and from time to time.
13. A city near an ocean would likely have _____ summers than a city at the same latitude located farther inland.
14. Albedo is the fraction of the total _____ that is reflected by any surface.

Short Answer

15. What is weather?
16. What is climate?
17. What are the most important measurable properties of weather and climate?

See Figure 6 on page 480 of your textbook.

18. Use Figure 6 on page 480 of your book to determine which layer of the atmosphere has the greatest temperature range.
19. Use Figure 6 on page 480 of your book to describe temperature changes in the stratosphere.

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20. Why do seasons occur? Draw a picture to support your answer.
21. What is heat?
22. What is temperature?
23. What are the three mechanisms of energy transfer?
24. What accounts for the blue color of the daytime sky? Draw a picture to support your answer.
25. What three things may happen to incoming solar radiation?
26. Describe each of the factors that exert a strong influence on temperature?
27. Compare and contrast the heating of land and water.
28. What are isotherms?

Essay

29. Describe where and when the vertical rays of the sun strike Earth during solstices and equinoxes from the perspective of an observer in the Northern Hemisphere.
30. Explain how cloud cover can influence temperature in the lower atmosphere.