

## Assessment

**Chapter Test A Chapter 20****Chapter: Water in the Atmosphere****MATCHING**

In the space provided, write the letter of the definition that best matches the term or phrase.

- |                                |   |
|--------------------------------|---|
| _____ 1. absolute humidity     | a. cooling a substance below its freezing point, condensation point, or sublimation point without a change in state |
| _____ 2. latent heat           | b. a gray cloud with a flat uniform base  |
| _____ 3. coalescence           | c. energy absorbed or released by matter when it changes phase  |
| _____ 4. stratus cloud         | d. highest altitude, feathery clouds composed of ice crystals found at the highest altitudes                        |
| _____ 5. dew point             | e. ratio of the amount of water vapor in the air to the amount of water vapor needed to reach saturation            |
| _____ 6. supercooling          | f. a solid particle in the atmosphere that provides the surface on which water vapor condenses                      |
| _____ 7. cirrus cloud          | g. the actual amount of water vapor contained in a given volume of air  |
| _____ 8. sublimation           | h. process by which ice changes directly into water vapor   |
| _____ 9. relative humidity     | i. formation of a large droplet by the combination of smaller droplets  |
| _____ 10. condensation nucleus | j. temperature at which the rate of condensation is the same as the rate of evaporation                             |

**MULTIPLE CHOICE**

In the space provided, write the letter of the answer choice that best completes each statement or best answers each question.

- \_\_\_\_\_ 11. Fog that is common along coasts, where warm, moist air over the water moves over land, is
- |                   |                 |
|-------------------|-----------------|
| a. radiation fog. | c. upslope fog. |
| b. advection fog. | d. steam fog.   |

Chapter Test A *continued*

- \_\_\_\_\_ 12. What might happen if enough energy is absorbed by liquid water?
- Condensation will occur.
  - The water will change to ice.
  - The water will change to a gas.
  - The water will never change.
- \_\_\_\_\_ 13. Compared to the rate for clear air, the adiabatic lapse rate for cloudy air is
- slower.
  - faster.
  - larger.
  - the same.
- \_\_\_\_\_ 14. Some clouds form when a body of moist air combines with another body of moist air with a different temperature in a process called
- adiabatic cooling.
  - mixing.
  - lifting.
  - advective cooling.
- \_\_\_\_\_ 15. An instrument that measures precipitation by bouncing radio waves off rain or snow is
- a hair hygrometer.
  - a radiosonde.
  - Doppler radar.
  - a rain gauge.
- \_\_\_\_\_ 16. A cloud whose name has the prefix *nimbo-* or the suffix *nimbus-* is
- high.
  - layered.
  - precipitation-free.
  - rain-producing.
- \_\_\_\_\_ 17. In cloud seeding, silver-iodide crystals are used as
- heating elements.
  - freezing nuclei.
  - dew cells.
  - dry ice.
- \_\_\_\_\_ 18. The mass of water vapor in a unit of air relative to the mass of the dry air is called the
- absolute humidity.
  - relative humidity.
  - adiabatic lapse rate.
  - mixing ratio.
- \_\_\_\_\_ 19. When the air temperature decreases, the rate of evaporation
- decreases.
  - increases.
  - may increase or decrease.
  - remains constant.
- \_\_\_\_\_ 20. A drop of liquid precipitation that is 2 mm in diameter is
- drizzle.
  - rain.
  - sleet.
  - hail.

## Assessment

**Chapter Test B****Chapter: Water in the Atmosphere****MATCHING**

In the space provided, write the letter of the definition that best matches the term or phrase.

- |                            |  |
|----------------------------|--|
| _____ 1. advective cooling | a. cooling a substance below its freezing point, condensation point, or sublimation point without changing its state |
| _____ 2. sublimation       | b. decrease in temperature of an air mass as the air mass moves over a cold surface                                  |
| _____ 3. supercooling      | c. process in which small droplets join to form a large droplet  |
| _____ 4. adiabatic cooling | d. decrease in temperature of an air mass as the air rises and expands   |
| _____ 5. coalescence       | e. changing of a solid directly into a gas   |

**MULTIPLE CHOICE**

In the space provided, write the letter of the answer choice that best completes each statement or best answers each question.

- \_\_\_\_\_ 6. When ice melts, latent heat
- is released.
  - is absorbed.
  - evaporates.
  - is sublimated.
- \_\_\_\_\_ 7. Clouds that often bring thunderstorms are called
- nimbostratus.
  - stratocumulus.
  - altocumulus.
  - cumulonimbus.
- \_\_\_\_\_ 8. Precipitation that occurs when rain falls through a layer of freezing air close to the ground is called
- hail.
  - drizzle.
  - sleet.
  - snow.

**Chapter Test B *continued***

- \_\_\_\_\_ 9. Condensation nuclei are
- ice and dust particles.
  - large solid surfaces.
  - bodies of moist air.
  - icy clouds.
- \_\_\_\_\_ 10. Which of the following accurately describes the dew point?
- The rate of evaporation exceeds the rate of condensation.
  - The rate of condensation exceeds the rate of evaporation.
  - The rate of evaporation equals the rate of condensation.
  - The vapor pressure is high, and the condensation rate is low.
- \_\_\_\_\_ 11. The average amount of water produced by 50 cm of snow is
- 1 cm.
  - 5 cm.
  - 10 cm.
  - 50 cm.
- \_\_\_\_\_ 12. Based on results from cloud seeding so far, meteorologists will most likely
- advise against cloud seeding because it is risky.
  - expand seeding efforts because it is successful.
  - stop seeding because it does not work.
  - continue experimenting because the results are mixed.
- \_\_\_\_\_ 13. A technology that can save lives by warning people of an approaching storm is
- a radiosonde.
  - a psychrometer.
  - a rain gauge.
  - Doppler radar.
- \_\_\_\_\_ 14. Where would the air contain the most moisture?
- over Hawaii
  - over Arizona
  - over the Arctic Circle
  - over the Rocky Mountains
- \_\_\_\_\_ 15. The mass of water vapor in a unit of air relative to the mass of the dry air is
- humidity.
  - the relative humidity.
  - the absolute humidity.
  - the mixing ratio.