

## Chapter 8 Review Questions

MULTIPLE CHOICE: Choose the one alternative that best completes the statement or answers the question.

- Air masses are identified by a pair of letters, one lowercase and one uppercase. The uppercase letter (P, A, or T) refers to:
  - average air pressure within the air mass.
  - the approximate latitude of the air mass source region.
  - the humidity levels within the air mass.
  - the elevation of the air mass source region.
- A cT air mass is:
  - warm and humid.
  - cold and dry.
  - warm and dry.
  - cold and humid.
- Which of the following is not a good source region for air masses?
  - the Gulf of Mexico
  - central Canada
  - the North Pacific
  - the central United States
- When an air mass is warmer than the surface over which it is moving:
  - the letter k is added after the air mass symbol.
  - visibility within the air mass is usually very good.
  - the air becomes more stable.
  - the lapse rate in the air mass is increased.
- A *nor'easter* typically occurs when:
  - NE winds associated with a low-pressure system draw mP air into the northeastern United States.
  - the polar jet stream weakens and allows mP air to invade New England.
  - the NE trade winds strengthen in the Pacific during a La Niña event.
  - a cP air mass from the northeast moves into Texas.
- Siberian Express* is the term used when:
  - an outbreak of bitterly cold air from Canada intrudes over a large part of the United States.
  - a modified air mass originating in Siberia reaches the Pacific Northwest.
  - an unusually cold air mass enters the Rocky Mountains.
  - an mP air mass from the north Atlantic enters New England and generates snowfall.
- In North America the \_\_\_\_\_ air mass forms only in the summer.

- A) mP
- B) cT
- C) mT
- D) cP

8. The \_\_\_\_\_ air mass often originates as a different air mass in Siberia and is subsequently altered.

- A) mP
- B) mT
- C) cP
- D) cT

9. "Lake-effect" snow is associated with the \_\_\_\_\_ air mass.

- A) cT
- B) cP
- C) mT
- D) mP

10. Lake-effect snowfall is caused by:

- A) air mass modification related to the differential heating of land and water.
- B) ice crystals falling from a cP air mass on the windward side of a lake.
- C) an mP air mass passing over a cold body of water.
- D) warm air masses passing over a cold lake in the autumn.

11. Which of the following statements is TRUE of lake-effect snowfall?

- A) Lake-effect snowfall accounts for only a small portion of seasonal snowfall along the eastern edges of the Great Lakes.
- B) Along the Great Lakes, lake-effect snowfall usually only occurs within 80 km of the leeward lake shores.
- C) Lake-effect events are not capable of generating more than a centimeter or two of snow.
- D) Lake-effect events are produced through the modification of mP air masses.

12. Lines connecting places having equal rainfall on a map are called:

- A) isotypes.
- B) isohyets.
- C) isolines.
- D) isobars.

13. What weather is associated with cA air masses?

- A) occasional periods of clear, cool weather in the summer
- B) cold waves in winter
- C) hot humid conditions leading to cumulus cloud development and showers or thunderstorms
- D) nor'easters

14. What does the lowercase letter *w* indicate about an air mass?
- A) The air mass is drier than the surface over which it is passing.
  - B) The air mass is colder than the surface over which it is passing.
  - C) The air mass is warmer than the surface over which it is passing.
  - D) The air mass is wetter than the surface over which it is passing.
15. If the lowercase letter *k* appears at the end of an air mass identification code, what can be said about the changes likely to happen within that air mass?
- A) The air mass is likely to become more *unstable*.
  - B) The air mass is likely to become more *stable*.
  - C) The air mass will not undergo any air mass modifications.
  - D) The expected air mass modifications are impossible to predict.
16. Which of the following air masses probably has the lowest water vapor content?
- A) cE
  - B) cT
  - C) cP
  - D) cA
17. An air mass from the Gulf of Mexico that moves northward over the U.S. in winter would be labeled:
- A) cTw.
  - B) mTk.
  - C) mPw.
  - D) cTk.
  - E) mTw.

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

18. Air masses are identified by two or three-letter codes.
19. The symbol used when classifying Maritime Polar air masses is MP.
20. cP and cA air masses are never experienced in the southern U.S.