

Quiz: Clouds and Precipitation

Part One: Multiple Choice - There is only one correct answer to each question. Choose the best answer.

1. Which term is used to describe the state change from gas to liquid?
a. sublimation b. evaporation c. condensation d. deposition
2. A parcel of air has a specific humidity of 14g of water per kilogram of air and a relative humidity of 50%. As the air is warmed but no moisture is added:
a. the relative humidity increases b. the specific humidity increases
c. the relative humidity decreases d. the specific humidity decreases
3. As air rises and expands it:
a. cools b. warms c. remains at a constant temperature
4. Stable air is:
a. cooler than the surroundings b. warmer than the surrounding
c. the same temperature as the surroundings d. cannot be determined
5. The normal lapse rate is:
a. the rate that a parcel of air cools as it rises b. the rate a parcel of air warms as it rises
c. the rate the atmosphere cools with height d. the rate the atmosphere warms with height
6. When air is lifted because it encounters a physical barrier this is called:
a. frontal wedging b. orographic lifting c. adiabatic expansion d. none of these
7. The cloud type whose name means layers is:
a. cumulus b. nimbus c. cirrus d. stratus
8. The cloud term that means stormy is:
a. cumulus b. nimbus c. cirrus d. stratus
9. Which of the following is not a proposed mechanism for rain formation?
a. hygroscopic condensation b. collision-coalescence c. ice crystal process d. all are mechanisms
10. Two parcels of air have the same specific humidity. One is warm and one is cool. Which air parcel has the greatest relative humidity?
a. the warm one b. the cool one c. both the same d. insufficient information

Part Two: True/False

- T F 1. Fog is a cloud with its base at or near the ground.
T F 2. Deserts form on the windward side of mountains.
T F 3. The wet adiabatic rate is always slower than the dry adiabatic rate.
T F 4. Air at the dew point has a relative humidity of 100 percent.
T F 5. When stable air is forced to rise it forms towering clouds.

Part Three: Completion

1. A device used to measure relative humidity and dew point is called a(n)_____.
2. The state change from a liquid to gas is called _____.
3. Clouds that are fluffy with low bases and vertical development and are associated with fair weather are called _____.
4. During state changes heat is released or absorbed. This type of heat is called _____.
5. When air is holding the maximum amount of water vapor that it can it is said to be _____.

Answers

Multiple Choice

1. c 2. c 3. a 4. a 5. d 6. b 7. d 8. b 9. d 10. b

True/False

1. True
2. False - all the rain is dumped on the windward side. The leeward side is the desert.
3. True because of latent heat released during condensation
4. True
5. False - unstable air forms towering clouds

Completion

1. hygrometer
2. evaporation
3. cumulus
4. latent heat
5. saturated