

Meteorology Fundamentals

Meteorology · Answer Key · 15 Questions

1. Which layer of the Earth's atmosphere is responsible for most weather phenomena, including cloud formation and precipitation?

- A) Stratosphere
- B) Mesosphere
- C) Troposphere**
- D) Thermosphere

2. The Coriolis effect, which influences the direction of winds and ocean currents, is a result of:

- A) Earth's axial tilt
- B) Earth's rotation**
- C) Solar radiation
- D) Ocean tides

3. What is the primary driving force behind convection currents in the atmosphere?

- A) Pressure gradients
- B) Earth's magnetic field
- C) Uneven heating of the Earth's surface**
- D) The moon's gravitational pull

4. A cold front is characterized by:

- A) Warm air advancing and replacing cooler air
- B) Cool air advancing and replacing warmer air**
- C) A stationary boundary between air masses
- D) The formation of thunderstorms without significant frontal movement

5. Which instrument is used to measure atmospheric pressure?

- A) Anemometer
- B) Thermometer
- C) Hygrometer
- D) Barometer**

6. The process by which water vapor in the atmosphere changes directly into ice without first becoming a liquid is called:

- A) Evaporation
- B) Condensation
- C) Sublimation
- D) Deposition**

7. What type of cloud is typically associated with fair weather and often appears as puffy, white, cotton-like masses?

- A) Cumulonimbus
- B) Stratus
- C) Cirrus
- D) Cumulus**

8. Jet streams are fast-flowing, narrow air currents found in the upper atmosphere. What typically causes them?

- A) The Earth's magnetic field
- B) Large temperature differences between air masses**
- C) The absorption of solar radiation by the ozone layer
- D) Ocean currents

9. Which of the following terms describes the total amount of water vapor present in the air?

- A) Relative humidity
- B) Dew point
- C) Absolute humidity**
- D) Saturation vapor pressure

10. The global circulation of air is influenced by a combination of uneven solar heating, the Coriolis effect, and:

- A) Ocean currents
- B) Continental drift
- C) The distribution of land and sea**
- D) Volcanic activity

11. What is the approximate percentage of nitrogen in the Earth's atmosphere?

- A) 78%**
- B) 21%
- C) 0.9%
- D) 0.04%

12. The lapse rate refers to the rate at which:

- A) Wind speed increases with altitude
- B) Temperature decreases with altitude**
- C) Humidity increases with altitude
- D) Pressure increases with altitude

13. Which phenomenon is caused by the scattering of sunlight by atmospheric gases, particularly nitrogen and oxygen, resulting in the sky appearing blue?

- A) Rainbows
- B) Auroras
- C) Rayleigh scattering**
- D) Mirages

14. A hurricane is a tropical cyclone characterized by a rotating wind system and sustained winds of at least:

- A) 74 miles per hour**
- B) 50 miles per hour
- C) 100 miles per hour
- D) 30 miles per hour

15. What is the term for the state of the atmosphere at a particular place and time, including temperature, humidity, precipitation, wind, and cloudiness?

- A) Climate
- B) Weather**
- C) Season
- D) Atmospheric pressure