

Advanced Meteorology Quiz

Meteorology · Answer Key · 10 Questions

1. Which atmospheric layer is characterized by the presence of the ozone layer, which absorbs a significant portion of the Sun's ultraviolet radiation?

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

2. The Coriolis effect is most pronounced at which latitudes?

- A) Equatorial latitudes
- B) Mid-latitudes
- C) Polar latitudes**
- D) Subtropical latitudes

3. What is the primary mechanism for heat transfer within the atmosphere that leads to the formation of clouds and precipitation?

- A) Conduction
- B) Radiation
- C) Advection
- D) Convection**

4. Which atmospheric phenomenon is responsible for the visual display known as 'sprites,' 'blue jets,' and 'elves' above thunderstorms?

- A) Auroras
- B) Mesospheric electrical discharges**
- C) Stratospheric lightning
- D) Tropospheric convection currents

5. The Beaufort wind scale is an empirical measure that relates wind speed to observed conditions at sea or on land. What is the Beaufort number for a wind speed of approximately 40-47 knots?

- A) Force 7 (Near Gale)
- B) Force 8 (Gale)**
- C) Force 9 (Strong Gale)
- D) Force 10 (Storm)

6. What is the name for a persistent, large-scale pattern of atmospheric circulation characterized by high-pressure systems and predominantly clear skies, often influencing long-term weather patterns?

- A) Jet stream
- B) Hadley cell
- C) Rossby wave

D) Anticyclone

7. Which type of fog forms when moist air moves over a cold surface, causing the air to cool to its dew point?

- A) Radiation fog
- B) Evaporation fog

C) Advection fog

- D) Upslope fog

8. The lapse rate refers to the rate at which atmospheric temperature decreases with increasing altitude. What is the average environmental lapse rate in the troposphere?

A) 6.5°C per kilometer

- B) 9.8°C per kilometer
- C) 15.0°C per kilometer
- D) 3.5°C per kilometer

9. What meteorological term describes a sustained wind blowing from a particular direction, often used in aviation and forecasting for specific locations?

- A) Gust
- B) Squall
- C) Monsoon

D) Prevailing wind

10. The process by which water vapor in the atmosphere changes directly into ice without first becoming liquid water is known as:

- A) Condensation
- B) Sublimation

C) Deposition

- D) Evaporation