Celestial Meteorology

Meteorology · Answer Key · 15 Questions

1. Which planet in our solar system features a persistent storm known as the Great Red Spot?

A) Saturn
B) Jupiter
C) Neptune
D) Mars

2. What is the primary chemical component of the thick, heat-trapping clouds on the planet Venus?

A) Water vapor
B) Sulfuric acid
C) Methane
D) Liquid oxygen

3. On which planet would you find 'diamond rain' caused by extreme pressure squeezing carbon atoms?

A) Saturn
B) Uranus
C) Venus
D) Mars

4. What is the main reason for the intense wind speeds on Neptune, which can exceed 2,000 km/h?

A) Extremely low internal heat
B) Fast rotation
C) Very low atmospheric friction
D) Solar radiation

5. The atmosphere of Mars is composed primarily of which gas?

A) Nitrogen
B) Oxygen
C) Carbon dioxide
D) Argon

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6. Which moon of Saturn has a dense, nitrogen-rich atmosphere and liquid methane lakes?

A) Europa
B) Titan
C) Enceladus
D) Ganymede

7. What causes the blue color of the planet Uranus's atmosphere?

A) Reflected starlight
B) Methane gas
C) Nitrogen ice
D) Dust storms

8. Which planet experiences 'dry ice' (carbon dioxide) snowfall at its poles during winter?

A) Mercury
B) Mars
C) Jupiter
D) Saturn

9. Solar wind interacts with a planet's magnetic field to create which phenomenon in the upper atmosphere?

A) Auroras
B) Cyclones
C) Thermal inversions
D) Tidal locking

10. On Venus, surface temperatures are high enough to melt lead primarily due to which effect?

A) Volcanic activity
B) Runaway greenhouse effect
C) Proximity to the sun
D) High surface gravity

11. What feature characterizes the weather on Jupiter's moon Io?

A) Violent snowstorms
B) Massive volcanic plumes
C) Liquid water rain
D) High-speed sandstorms

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12. Which planet has a tilt of 98 degrees, resulting in extreme seasonal weather variations?

A) Neptune
B) Saturn
C) Uranus
D) Venus

13. The 'Great Dark Spot' was a prominent storm feature observed by the Voyager 2 spacecraft on which planet?

A) Jupiter
B) Saturn
C) Uranus
D) Neptune

14. What is the primary source of energy that drives weather systems on gas giant planets?

A) Solar radiation
B) Internal heat from gravitational contraction
C) Radioactive decay
D) Magnetic field friction

15. Earth's ozone layer is located primarily within which atmospheric layer?

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

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