

Fundamentals of Climatology

Climatology · Answer Key · 25 Questions

1. How many years is the standard period used by the WMO to calculate climate normals?

- A) 5 years
- B) 10 years
- C) 30 years**
- D) 100 years

2. In which year was the Intergovernmental Panel on Climate Change (IPCC) established?

- A) 1988**
- B) 1992
- C) 1997
- D) 2005

3. What percentage of Earth's atmosphere is composed of Nitrogen?

- A) 10%
- B) 21%
- C) 78%**
- D) 99%

4. Which scientist is credited with first proposing the 'greenhouse effect' in 1824?

- A) Joseph Fourier**
- B) Svante Arrhenius
- C) Guy Callendar
- D) Charles Keeling

5. How many main climate groups are included in the Köppen climate classification system?

- A) 2
- B) 5**
- C) 10
- D) 12

6. The Keeling Curve measures the concentration of which gas in the atmosphere?

- A) Oxygen
- B) Methane
- C) Nitrogen
- D) Carbon Dioxide**

7. What is the approximate freezing point of water in degrees Celsius?

- A) 0**
- B) 10
- C) 32
- D) 100

8. The Montreal Protocol, signed in 1987, was designed to protect which layer of the atmosphere?

- A) Troposphere
- B) Ozone layer**
- C) Ionosphere
- D) Mesosphere

9. How many degrees Celsius of warming since the pre-industrial era is the 2015 Paris Agreement aiming to limit global temperature rise to?

- A) 1.0
- B) 1.5**
- C) 2.5
- D) 5.0

10. The 'Little Ice Age' is generally considered to have ended around which year?

- A) 1750
- B) 1850**
- C) 1950
- D) 2000

11. What is the number of main layers in the Earth's atmosphere based on temperature profile?

- A) 3
- B) 5**
- C) 7
- D) 9

12. In 1896, which Swedish scientist calculated the effect of doubling atmospheric CO2 on global temperature?

- A) John Tyndall
- B) Svante Arrhenius**
- C) Milutin Milankovitch
- D) James Hansen

13. What is the latitude in degrees of the Equator?

A) 0

B) 45

C) 66

D) 90

14. The 'Milankovitch cycles' describe changes in Earth's orbit occurring over periods of how many thousands of years?

A) 1 to 5

B) 10 to 100

C) 500 to 1000

D) 5000 to 10000

15. What percentage of solar radiation is estimated to be reflected back into space by Earth's albedo?

A) 10%

B) 30%

C) 50%

D) 70%

16. How many primary climate zones are typically identified in the Earth's latitudinal system?

A) 3

B) 5

C) 7

D) 10

17. The year 2016 was recorded as one of the hottest on record; which organization tracks global surface temperatures?

A) NASA

B) WHO

C) UNESCO

D) FIFA

18. What is the approximate height of the Tropopause in kilometers at the equator?

A) 5 km

B) 16 km

C) 30 km

D) 50 km

19. The Kyoto Protocol was adopted in which year?

A) 1990

B) 1997

C) 2003

D) 2010

20. How many atoms of oxygen are in a single ozone molecule?

A) 1

B) 2

C) 3

D) 4

21. Approximately how many degrees is the Earth's axial tilt?

A) 13.5

B) 23.5

C) 33.5

D) 43.5

22. The Sahara Desert is classified as which type of climate zone?

A) Tropical

B) Arid

C) Temperate

D) Polar

23. What was the approximate global human population in 1900, when modern climate record-keeping increased?

A) 0.6 billion

B) 1.6 billion

C) 3.6 billion

D) 6.6 billion

24. In which year did James Hansen testify before the US Senate about global warming?

A) 1978

B) 1988

C) 1998

D) 2008

25. Water vapor contributes to approximately what percentage of the natural greenhouse effect?

A) 10%

B) 30%

C) 60%

D) 90%