

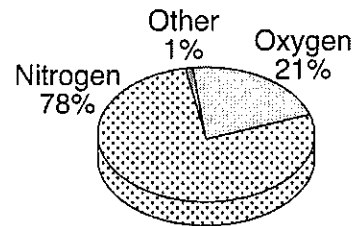
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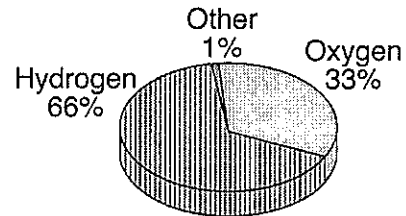
- The ozone layer protects life on Earth by absorbing harmful ultraviolet radiation. The ozone layer is located between 17 kilometers and 35 kilometers above Earth's surface in which atmospheric temperature zone?
A) troposphere B) stratosphere
C) mesosphere D) thermosphere
- In which atmospheric temperature zone does most precipitation occur?
A) thermosphere B) mesosphere
C) stratosphere D) troposphere
- At what approximate altitude in the atmosphere can stratospheric ozone be found?
A) 10 km B) 30 km
C) 70 km D) 100 km
- In which two Earth regions is oxygen the second most abundant element by volume?
A) crust and hydrosphere
B) hydrosphere and troposphere
C) troposphere and core
D) core and crust
- What is the approximate percent of oxygen by volume present in Earth's lower atmosphere?
A) 21% B) 33% C) 46% D) 94%
- In which two temperature zones of the atmosphere does the temperature increase with increasing altitude?
A) troposphere and stratosphere
B) troposphere and mesosphere
C) stratosphere and thermosphere
D) mesosphere and thermosphere
- The altitude of the ozone layer near the South Pole is 20 kilometers above sea level. Which temperature zone of the atmosphere contains this ozone layer?
A) troposphere B) stratosphere
C) mesosphere D) thermosphere
- Which temperature zone of Earth's atmosphere contains the most water vapor?
A) mesosphere B) stratosphere
C) thermosphere D) troposphere

9. Which pie graph correctly shows the percentage of elements by volume in Earth's troposphere?

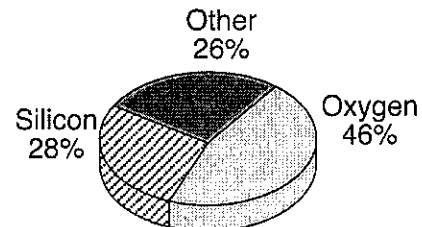
A)



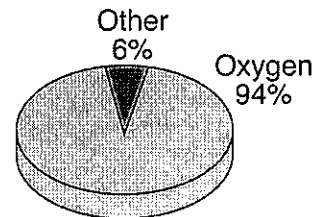
B)



C)



D)



10. If the base of a cloud is located at an altitude of 2 kilometers and the top of the cloud is located at an altitude of 8 kilometers, this cloud is located in the

- A) troposphere, only
B) stratosphere, only
C) troposphere and stratosphere
D) stratosphere and mesosphere

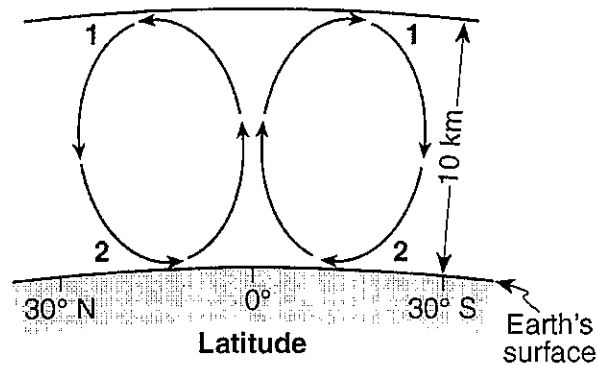
11. An air temperature of 95°C most often exists in which layer of the atmosphere?

- A) troposphere B) stratosphere
C) mesosphere D) thermosphere

12. Earth's troposphere, hydrosphere, and lithosphere contain relatively large amounts of which element?

- A) iron B) oxygen
C) hydrogen D) potassium

13. Base your answer to the following question on the cross section below and on your knowledge of Earth science. The cross section shows the general movement of air within a portion of Earth's atmosphere located between 30° N and 30° S latitude. Numbers 1 and 2 represent different locations in the atmosphere.



(Not drawn to scale)

Which temperature zone layer of Earth's atmosphere is shown in the cross section?

- A) troposphere B) stratosphere C) mesosphere D) thermosphere
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14. As the altitude increases within Earth's stratosphere, air temperature generally
- A) decreases, only
B) increases, only
C) decreases, then increases
D) increases, then decreases
15. Ozone is concentrated in Earth's atmosphere at an altitude of 20 to 35 kilometers. Which atmospheric layer contains the greatest concentration of ozone?
- A) mesosphere B) thermosphere
C) troposphere D) stratosphere
16. What do the tropopause, stratopause, and mesopause all have in common?
- A) Each is a point of maximum temperature in its layer of the atmosphere.
B) Each is an interface between two layers of the atmosphere.
C) Each is a region of increasing pressure within the atmosphere.
D) Each is a zone of decreasing water vapor content within the atmosphere.
17. In which atmospheric layer is most water vapor found?
- A) troposphere B) stratosphere
C) thermosphere D) mesosphere
18. The graph below shows the average concentration of ozone in Earth's atmosphere over Arizona during 4 months of the year.
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- Which layer of Earth's atmosphere contains the greatest concentration of ozone?
- A) troposphere B) stratosphere
C) mesosphere D) thermosphere
19. As altitude increases from the tropopause to the mesopause, the atmospheric temperature will
- A) decrease, only
B) increase, only
C) decrease, then increase
D) increase, then decrease

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20. Which list shows atmospheric layers in the correct order upward from the Earth's surface?
- A) thermosphere, mesosphere, stratosphere, troposphere
 - B) troposphere, stratosphere, mesosphere, thermosphere
 - C) stratosphere, mesosphere, troposphere, thermosphere
 - D) thermosphere, troposphere, mesosphere, stratosphere
21. Which statement best describes the stratosphere?
- A) It is warmer at the top than at the bottom.
 - B) It is located 75 kilometers above sea level.
 - C) It has greater pressure at the top than at the bottom.
 - D) It absorbs large amounts of water vapor from the troposphere.
22. Why do most clouds form in the troposphere?
- A) Air pressure rises with increasing altitude.
 - B) The dewpoint is too high in the other layers of the atmosphere.
 - C) The other layers of the atmosphere are too cold to contain water.
 - D) The lowest 11 km of the atmosphere contains almost all of the atmospheric water vapor.
23. Which element has the highest percentage by volume in the troposphere?
- A) oxygen
 - B) nitrogen
 - C) hydrogen
 - D) carbon dioxide
24. What is the approximate elevation of the stratopause?
- A) 10 km
 - B) 30 km
 - C) 50 km
 - D) 80 km
25. Which statement most accurately describes the Earth's atmosphere?
- A) The atmosphere is layered, with each layer possessing distinct characteristics.
 - B) The atmosphere is a shell of gases surrounding most of the Earth.
 - C) The atmosphere's altitude is less than the depth of the ocean.
 - D) The atmosphere is more dense than the hydrosphere but less dense than the lithosphere.
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