

Exam

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) Which of the following is NOT true about our Solar System? 1) _____
 - A) It contains 8 planets and 4 dwarf planets.
 - B) It is located in the approximate center of the Milky Way Galaxy.
 - C) It is embedded in the the Orion Spur of the Sagittarius Arm of the Milky Way Galaxy.
 - D) It is some 30,000 lightyears from *Sagittarius A**, the black hole at the center of the Milky Way.

- 2) _____ is a supermassive black hole sitting in the galactic center of the Milky Way. 2) _____
 - A) Messier 31
 - B) Centaurus A
 - C) Sagittarius A*
 - D) The Orion Spur

- 3) The planetesimal hypothesis pertains to the formation of the 3) _____
 - A) universe.
 - B) planets.
 - C) galaxy.
 - D) ocean basins.

- 4) The basic idea behind the planetesimal hypothesis is that 4) _____
 - A) planets form as a direct result of the nuclear fusion of nebular gases and planetesimals.
 - B) small grains of cosmic dust and other solids gradual accrete to form planetesimals that may grow to become protoplanets and eventually planets.
 - C) planets form from the remains of super-giant planetesimals that undergo nuclear fission and blow apart, thereby creating smaller objects—the planets.
 - D) early in the solar system's history, a star passed near to the Sun and pulled off gases that eventually condensed to form planets.

- 5) Earth and the Sun formed specifically from 5) _____
 - A) the galaxy.
 - B) a nebula of dust and gases.
 - C) other planets.
 - D) unknown origins.

- 6) According to findings from the Kepler telescope, the estimated number of planets in the Milky Way is _____ with some _____ in habitable zones. 6) _____
 - A) 50 billion; 500 million
 - B) 1 billion; 25 million
 - C) 300 billion; 125 billion
 - D) 25 million; 3 million

- 7) Our planet and our lives are powered by 7) _____
 - A) radiant energy from the Sun.
 - B) energy derived from inside Earth.
 - C) shorter wavelengths of gamma rays, X-rays, and ultraviolet.
 - D) utilities and oil companies.

- 8) Which of the following is TRUE? 8) _____
 - A) The Sun is also a planet.
 - B) The Sun is the largest star in the Milky Way Galaxy.
 - C) The Sun produces energy through fusion processes.
 - D) The Milky Way is part of our Solar System.

- 9) Which of the following is FALSE? 9) _____
- A) The Sun and Solar System are part of the Milky Way Galaxy.
 - B) The Sun is by far the largest star in the Milky Way Galaxy.
 - C) Compared with other stars in the Galaxy, the Sun is average in temperature, size, and color.
 - D) The Sun produces energy through fusion.
- 10) Light travels at a speed of approximately 10) _____
- A) 80,500 kilometers per hour (50,000 mph).
 - B) 300,000 kilometers per hour (186,336 mph).
 - C) 1,000,000,000 kilometers per second (621,118,012 miles per second).
 - D) 300,000 kilometers per second (186,333 miles per second).
- 11) Which of the following does NOT accurately describe Earth's distance from the Sun? 11) _____
- A) Earth's orbit around the sun is presently circular and, therefore Earth is always equidistant from the sun throughout the year.
 - B) Earth is closer to the Sun in January (perihelion) and farther away in July (aphelion).
 - C) The Earth-Sun distance averages 150 million kilometers (93 million miles).
 - D) It takes light an average of 8 minutes and 20 seconds to travel from the Sun to Earth.
- 12) Which of the following is TRUE of Earth's orbit about the Sun? 12) _____
- A) It is elliptical.
 - B) It is perfectly circular.
 - C) It takes approximately the same time for Earth as it does the rest of the planets in the solar system to orbit the Sun.
 - D) The orbit does not vary over millions of years.
- 13) When does Earth's perihelion position, the point of orbit when it is closest to the Sun, occur? 13) _____
- A) During the Northern Hemisphere's summer.
 - B) During the Northern Hemisphere's winter.
 - C) During the Northern Hemisphere's autumn.
 - D) During the Northern Hemisphere's spring.
- 14) Which of the following is NOT true of sunspots? 14) _____
- A) They can be several times larger than Earth.
 - B) They are surface disturbances caused by magnetic storms.
 - C) They can produce flares and prominences.
 - D) They are brighter than the rest of the Sun's surface.
- 15) A magnetic disturbance on the Sun's surface is called 15) _____
- A) the solar wind.
 - B) the electromagnetic spectrum.
 - C) a sunspot.
 - D) a magnetospheric cyclone.
- 16) On its way to Earth, the solar wind first encounters 16) _____
- A) Earth's surface.
 - B) the lower atmosphere.
 - C) the magnetosphere.
 - D) the atmosphere.
- 17) Earth's magnetosphere is generated by 17) _____
- A) nuclear fission in Earth's core.
 - B) dynamo-like motions in Earth's interior.
 - C) gravitational accretion.
 - D) nuclear fusion in Earth's core.

- 18) The auroras in the upper atmosphere are caused by 18) _____
A) visible light interaction with the asthenosphere.
B) the interaction of the solar wind and upper layers of Earth's atmosphere.
C) various weather phenomena.
D) AM radio broadcasts.
- 19) The Sun gives off electromagnetic radiation because 19) _____
A) energy is converted into matter.
B) matter is converted into energy.
C) matter and energy totally annihilate one another in matter-antimatter reactions.
D) kinetic energy is converted into potential energy.
- 20) The distance between corresponding points on any two successive waves is known as the 20) _____
A) wavelength. B) frequency.
C) electromagnetic spectrum. D) Kelvin.
- 21) The number of waves passing a fixed point in 1 second is known as the 21) _____
A) wavelength. B) frequency.
C) Kelvin. D) electromagnetic spectrum.
- 22) The Sun produces which of the following? 22) _____
A) Mainly ultraviolet and X-rays
B) Mainly visible light and infrared energy
C) Only radiant energy that is beneficial to life
D) Only solar wind
- 23) Radio waves have a _____ wavelength than visible light and are therefore _____ energetic. 23) _____
A) longer; less B) shorter; more C) shorter; less D) longer; more
- 24) Which of the following is TRUE of the Sun's electromagnetic spectrum? 24) _____
A) It consists exclusively of visible light and infrared energy.
B) It consists exclusively of streams of charged particles.
C) It consists of gamma ray, X-ray, ultraviolet, visible, and infrared wavelengths.
D) It consists exclusively of radiant energy made of gamma ray, X-ray, and ultraviolet wavelengths.
- 25) Which of the following is TRUE? 25) _____
A) Because the Sun is so far away, it is impossible to measure the wavelengths of its radiation.
B) The Sun emits longwave radiation, whereas Earth emits shortwave radiation.
C) The radiation emitted by the Sun and the are roughly the same wavelength.
D) The Sun emits shortwave radiation, whereas Earth emits longwave radiation.
- 26) The dominant wavelength of energy emitted by the Sun is 26) _____
A) the same length as that emitted by Earth.
B) shorter than that emitted by Earth.
C) longer than that emitted by Earth.

- 27) Which of the following is characterized by the longest wavelengths? 27) _____
A) Gamma Rays.
B) Visible.
C) Thermal infrared.
D) Radio waves.
E) X-Rays.
- 28) The _____ emits mainly _____ which is also called _____. 28) _____
A) Earth—longwave radiation—ultraviolet
B) Sun—longwave radiation—infrared
C) Sun—shortwave radiation—radio waves
D) Earth—shortwave radiation—infrared
E) Earth—longwave radiation—thermal infrared
- 29) The dominant wavelength emitted by Earth is 29) _____
A) gamma radiation. B) thermal infrared.
C) X-ray radiation. D) visible light.
- 30) Which of the following sequences is arranged in order from shorter wavelength to longer wavelength? 30) _____
A) X-rays, ultraviolet, visible, infrared
B) Radio waves, light, heat, X-rays
C) Infrared, visible, ultraviolet, X-rays
D) Gamma rays, microwaves, visible, X-rays
- 31) The thermopause refers to 31) _____
A) the Sun's surface.
B) the solar atmosphere that extends into space.
C) Earth's magnetic field.
D) the top of Earth's atmosphere.
- 32) Incoming solar radiation is called 32) _____
A) solar wind. B) insolation. C) solar constant. D) thermosphere.
- 33) The average insolation received by the thermopause when Earth is at its average distance from the sun is known as the 33) _____
A) incoming solar radiation. B) solar wind input to the atmosphere.
C) solar constant. D) energy balance.
- 34) The solar constant is measured at 34) _____
A) the thermopause. B) the edge of the Sun's atmosphere.
C) sea level. D) the Sun's surface.
- 35) Which of the following is TRUE relative to insolation at the thermopause relative to latitude? 35) _____
A) Annually, lower latitudes receive more insolation than the higher latitudes.
B) Annually, insolation is evenly distributed with little change by latitude.
C) Insolation can only be measured longitudinally, not latitudinally.
D) Annually, higher latitudes receive more insolation than lower latitudes.

- 36) The uneven distribution of insolation by latitude is primarily a result of _____
A) variation in the value of a watt.
B) variability in the Sun's output.
C) the changing distance of Earth from the Sun.
D) Earth's curvature, which presents varied angles to parallel solar rays.
- 37) What is the name of the location on the surface of Earth that receives insolation when the Sun is directly overhead? (When this occurs, the Sun's rays are perpendicular to this surface.) _____
A) North Polar point
B) Subsolar point
C) Zenith
D) Solar point
- 38) Which of the following is TRUE of the subsolar point? _____
A) The highest latitude at which it occurs is 60° N/S.
B) It never occurs beyond a few degrees of the equator.
C) It only occurs at latitudes between the tropics (23.5° N/S).
D) It occurs at all latitudes at least once throughout the year.
- 39) Which of the following is CORRECT relative to global net radiation? _____
A) The highest positive net radiation is in midlatitude regions, especially over land.
B) There is a latitudinal energy imbalance, with positive values at higher latitudes and lower at higher latitudes.
C) Global net radiation is, more or less, equal, at all latitudes.
D) There is a latitudinal energy imbalance, with positive values at lower latitudes and negative at higher latitudes.
- 40) The term "net radiation" refers to _____
A) the total amount of energy received by Earth.
B) the difference in amount of incoming and outgoing radiation.
C) radiation emitted by satellite networks.
D) the total amount of energy radiated by Earth.
- 41) The Sun's altitude refers to _____
A) the subsolar point.
B) how far the Sun is from Earth.
C) the angular distance from the equator to the latitude at which direct overhead insolation is received.
D) the angular height of the Sun above the horizon.
- 42) The Sun's declination refers to _____
A) the angular height of the Sun above the horizon.
B) its altitude, in thousands of feet, above the horizon.
C) the latitude of the subsolar point.
D) how far the Sun is from Earth.
- 43) The sun's declination migrates through _____ of latitude annually. _____
A) 47°. B) 23.5°. C) 66.5°. D) 133°. E) 30°.

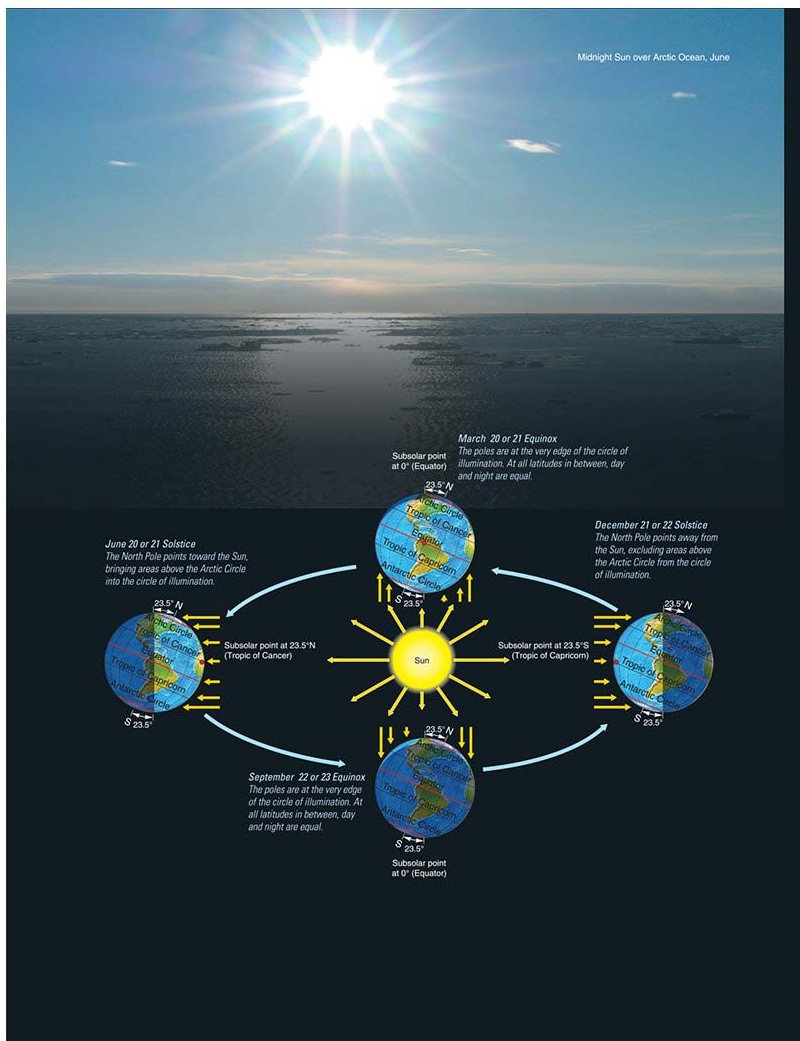
- 44) Which of the following is CORRECT regarding daylength? 44) _____
A) The equator always receives equal hours of day and night.
B) The range of daylength is shortest in the polar regions.
C) The equator experiences six hours difference in daylength between the summer and winter.
D) Daylength is uniform at all latitudes throughout the year.
- 45) Which of the following is TRUE of the number of hours of daylight? 45) _____
A) The number of hours of daylight varies depending on the latitude of the observer.
B) The number of hours of daylight varies the most along the equator.
C) The number of hours of daylight includes the hours between dawn and twilight, not just the hours from sunrise to sunset.
D) The number of hours of daylight varies the least at higher latitudes.
- 46) Which of the following is TRUE regarding daylength? 46) _____
A) The people living at 40° N or S latitude experience about six-hours difference in daylength from winter to summer.
B) Daylength varies more at the equator than at higher latitudes.
C) Nowhere on Earth does daylength vary by as much as 24 hours.
D) The equator experiences at least six-hours difference in daylength from winter to summer.
- 47) Changes in daylength, the Sun's altitude above the horizon, and the Sun's declination over the course of the year 47) _____
A) produce Earth's rotation.
B) are factors that follow an irregular, random cycle.
C) are phenomena that occur only at the equator.
D) are responsible for the seasons.
- 48) Which of the following is NOT a reason for the seasons? 48) _____
A) The timing of Earth's perihelion and aphelion
B) The shape of Earth
C) The revolution of Earth around the Sun
D) Earth's axial tilt
- 49) Which of the following characterizes Earth's revolution? 49) _____
A) It is responsible for creating the circle of illumination, and hence, day/night relationships.
B) It is clockwise when viewed from above the North Pole.
C) It determines the timing of seasons and length of the year.
D) It takes approximately 24 hours.
- 50) The elapsed time between two crossings of the equator by the Sun is known as the _____. 50) _____
A) parallelism. B) summer. C) inter-equinox. D) tropical year.
- 51) Which of the following best describes the direction of Earth's rotation? 51) _____
A) Clockwise.
B) Eastward
C) Counterclockwise
D) Counterclockwise when viewed from the North Pole; clockwise when viewed from the South Pole, eastward when viewed from the equator.

- 52) Earth's rotation is described as _____
A) west to east.
B) north to south.
C) east to west.
D) clockwise when viewed from above the North Pole.
- 53) Which of the following is NOT true regarding rotational velocities at different latitudes? _____
A) At 90° latitude, the rotational velocity is 1452 kmph (902 mph).
B) At 60° latitude, the rotational velocity is 838 kmph (521 mph).
C) At 30° latitude, the rotational velocity is 1452 kmph (902 mph).
D) At 0° latitude, the rotational velocity is 1675 kmph (1040 mph).
- 54) At all times during the year, the circle of illumination _____
A) divides Earth into eastern and western halves.
B) divides Earth between equal halves of lightness and darkness.
C) divides Earth between Northern and Southern Hemispheres.
D) separates winter from summer.
- 55) The plane of Earth's orbit about the Sun is called _____
A) perihelion. B) the plane of the ecliptic.
C) a great circle. D) aphelion.
- 56) Which of the following cannot be attributed to the effects of Earth's rotation? _____
A) Daylength
B) Rise and fall of tides
C) Deflection of the winds
D) Deflection of the ocean currents
E) Latitudinal variations in net radiation
- 57) Which of the following is NOT true? _____
A) Earth's axis is tilted 23.5° relative to the plane of the ecliptic.
B) The axis through Earth's two poles points just slightly off Polaris.
C) Throughout the year, Earth's axis maintains the same alignment relative to the plane of the ecliptic.
D) During the winter months, Earth's axis is aligned towards Southern Cross.
- 58) Which of the following is TRUE regarding Earth's axis? _____
A) The axis is tilted 23.5° from a perpendicular to the plane of the ecliptic.
B) Axial tilt is unrelated to the phenomenon of seasonal change.
C) The axis remains parallel to the plane of the ecliptic.
D) The amount of axial tilt fluctuates during the year and forms the basis for seasonal changes.
- 59) The Southern Hemisphere's summer solstice occurs _____
A) at the same time as the Northern Hemisphere's summer solstice.
B) on or around June 21.
C) during the Northern Hemisphere's equinox.
D) on or around December 21.

60) On the Northern Hemisphere's summer solstice, the north polar region receives _____ daily insolation than areas nearer the equator because _____.

- A) more; the Sun does not set
B) less; the Sun does not rise
C) more; the Sun is higher in the sky
D) less; the Sun is lower in the sky

60) _____



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61) Which of the following is TRUE for the December Solstice?

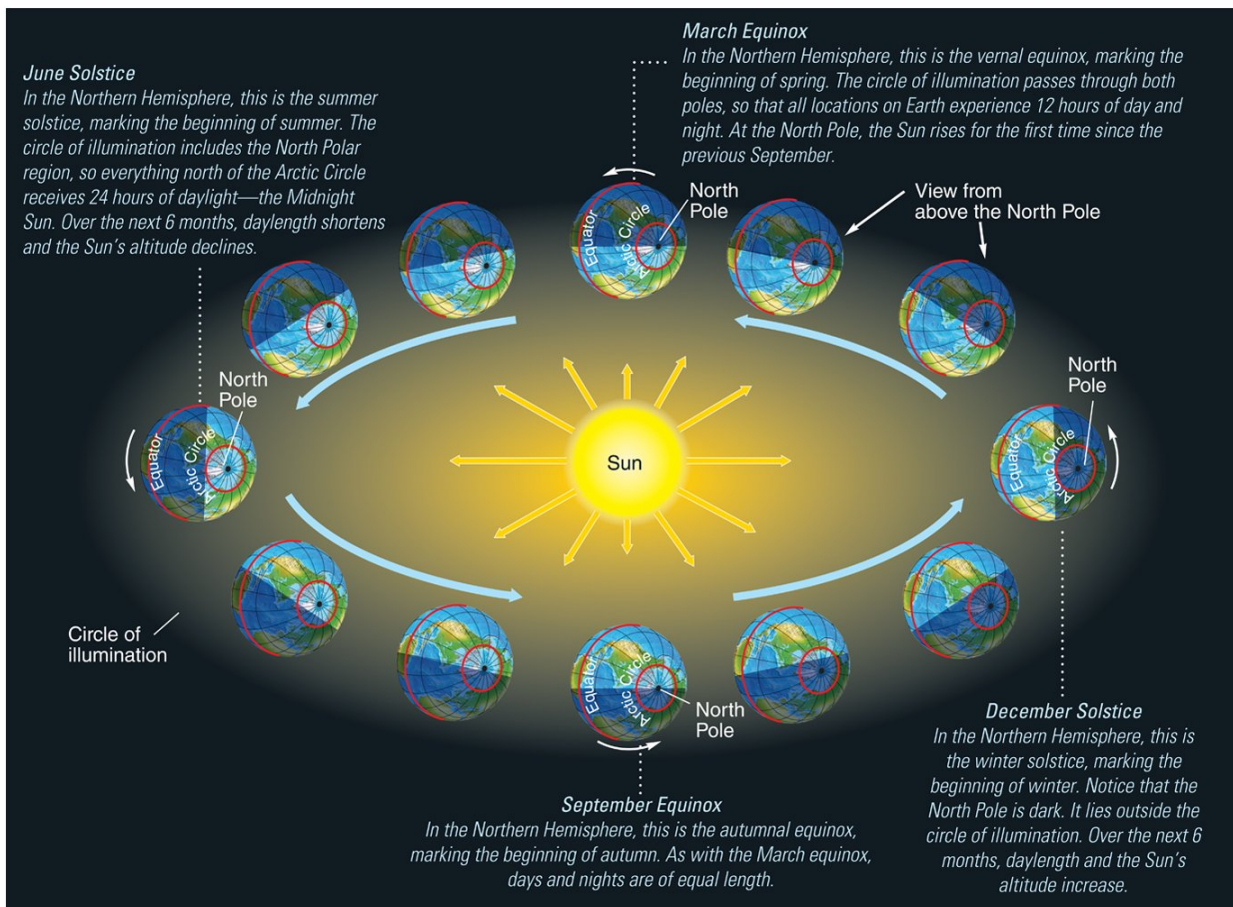
- A) The subsolar point is at the Tropic of Cancer (23.5° N).
B) The subsolar point is at the equator.
C) The Arctic Circle is completely within the circle of illumination.
D) The Antarctic Circle is completely within the circle of illumination.

61) _____

62) Which of the following is TRUE for the June Solstice?

- A) The subsolar point is at the Tropic of Capricorn (23.5° S).
B) The Arctic Circle is completely within the circle of illumination.
C) The subsolar point is at the equator.
D) The Antarctic Circle is completely within the circle of illumination.

62) _____



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63) Which of the following is TRUE for the March Equinox?

63) _____

- A) The subsolar point is at the Tropic of Capricorn (23.5° S).
- B) The subsolar point is at the Tropic of Cancer (23.5° N).
- C) The subsolar point is at the Prime Meridian.
- D) The subsolar point is at the equator.

64) Which of the following is TRUE for the September Equinox?

64) _____

- A) The circle of illumination passes through both the poles.
- B) There is 24 hours of daylight at the South Pole.
- C) The Antarctic Circle is completely within the circle of illumination.
- D) The Arctic Circle is completely within the circle of illumination.
- E) There is 24 hours of daylight at the North Pole.

65) Based on your understanding of the march of the seasons, which of the following is TRUE of Quito, Ecuador ($0^{\circ} 15' \text{ N}$, $78^{\circ} 35' \text{ S}$)?

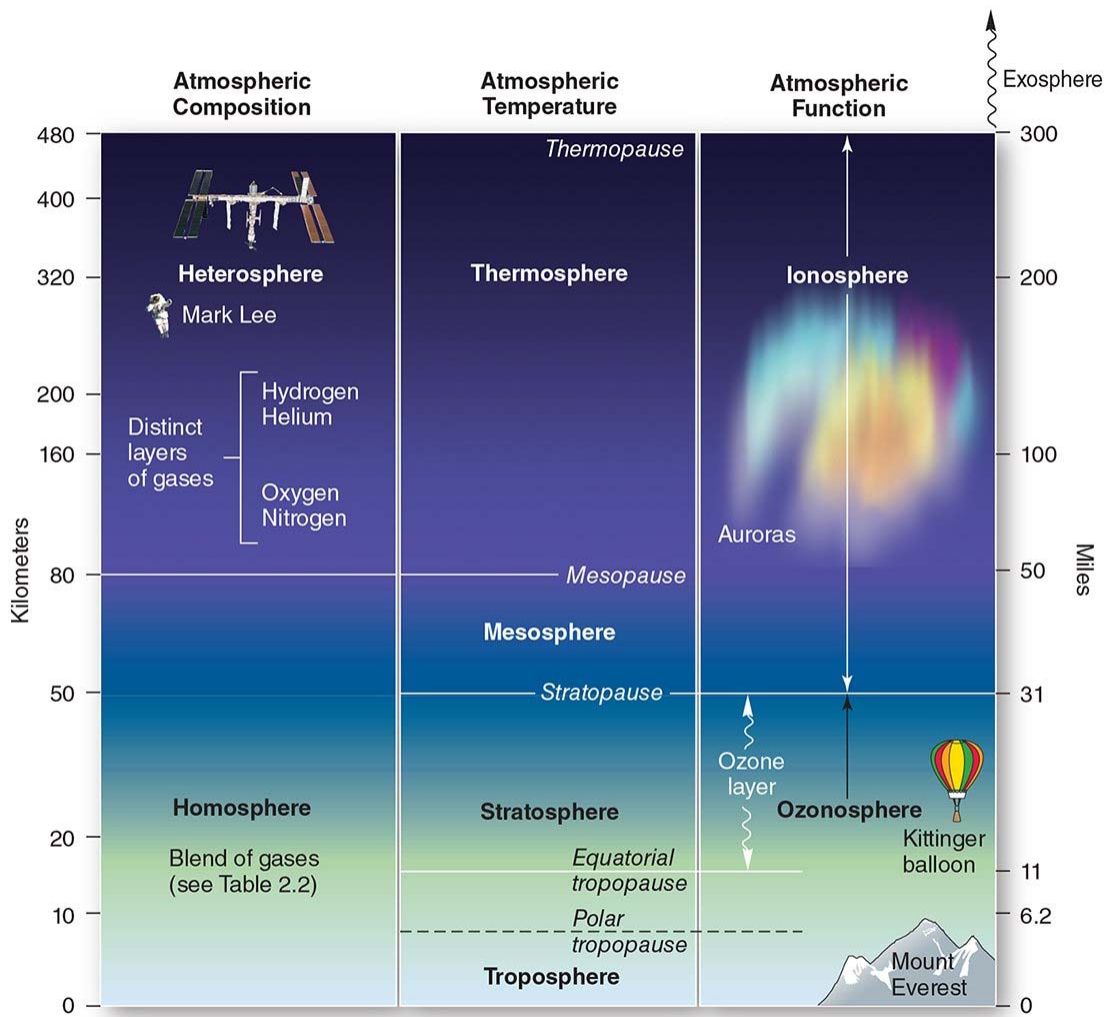
65) _____

- A) Quito experiences days and nights of equal lengths throughout the year.
- B) Quito is at a latitude that is never the subsolar point.
- C) At noon on June 21st, the sun is directly overhead in Quito.
- D) During the June Solstice, Quito experiences 24 hours of darkness because it is completely outside of the circle of illumination.

- 66) Which of the following is TRUE of the September equinox? 66) _____
- A) The sun rises at the South Pole, where it will remain over the horizon for the following six months.
 - B) All latitudes on Earth, except the Equator, experience unequal daylengths.
 - C) The subsolar point is at the Tropic of Capricorn (23.5° S).
 - D) The subsolar point is at the Tropic of Cancer (23.5° N).
 - E) The Northern Hemisphere spring officially begins.
- 67) Which of the following is TRUE of the March equinox? 67) _____
- A) At all latitudes between the poles, day and night are of equal length.
 - B) Moving south of the equator, the daylength increases, while moving north of the equator the daylength decreases.
 - C) In the Southern Hemisphere, it is known as the vernal equinox
 - D) The sun's direct rays strike perpendicular at the Tropic of Capricorn (23.5° S).
- 68) On Earth, the Sun passes directly overhead at 25° north latitude _____ times a year. 68) _____
- A) 4 B) 2 C) 0 D) 1
- 69) On the June Solstice, this area experiences 24 hours of daylight. 69) _____
- A) between the Tropic of Cancer and the Arctic Circle
 - B) below the Antarctic Circle
 - C) between the Tropic of Capricorn and the Antarctic Circle
 - D) above the Arctic Circle
- 70) Which of the following statements is TRUE? 70) _____
- A) The Northern Hemisphere vernal equinox is the Southern Hemisphere's summer solstice.
 - B) The Northern Hemisphere vernal equinox is also the Southern Hemisphere's vernal equinox.
 - C) The Northern Hemisphere vernal equinox is the Southern Hemisphere's winter solstice.
 - D) The Northern Hemisphere vernal equinox is the Southern Hemisphere's autumnal equinox.
- 71) For observers in the Northern Hemisphere, which of the following is TRUE? 71) _____
- A) Daylength decreases from the winter solstice until the vernal equinox, when it begins to increase.
 - B) Daylength variations are negligible for all locations throughout the year except above the Arctic Circle.
 - C) Daylength is longest on the summer solstice and is shortest on the winter solstice.
 - D) Daylength becomes increasingly longer during the period from the summer solstice until the winter solstice.
- 72) The Tropic of Cancer refers to 72) _____
- A) the parallel that occurs at 23.5° south latitude.
 - B) the parallel that is the farthest northern location for the subsolar point during the year.
 - C) 0° latitude when the Sun crosses the equator.
 - D) the location of the subsolar point on September 22.
- 73) The equinox 73) _____
- A) is when the subsolar point is at one of the tropics.
 - B) has 12 hours of day and 12 hours of night for all locations.
 - C) is the longest day of the year at any given place.
 - D) occurs four times during the year.

- 74) The Tropic of Capricorn refers to _____
A) the parallel that is the farthest northern location for the subsolar point during the year.
B) that parallel that is 66.5° south latitude.
C) that parallel that is 23.5° south latitude.
D) the location of the subsolar point on September 22.
- 75) The longest days of the year in the Southern Hemisphere are experienced at the Northern Hemisphere's _____
A) spring equinox. B) autumn equinox.
C) summer solstice. D) winter solstice.
- 76) The longest days of the year in the Northern Hemisphere are experienced at the _____
A) vernal equinox.
B) time of 24-hour days at the South Pole.
C) winter solstice.
D) time that the Sun is directly overhead at the Tropic of Cancer.
E) autumnal equinox.
- 77) Which of the following relationships is INCORRECT? _____
A) December solstice – subsolar point is at 23.5° S latitude.
B) June 21 – subsolar point is at 23.5° N latitude.
C) September equinox – subsolar point is at 23.5° S latitude.
D) March equinox – subsolar point is at 0° latitude.
E) June solstice – subsolar point is at 23.5° N latitude.
- 78) Air consists of _____
A) a mixture of gases that behaves as if it were a single gas.
B) mostly carbon dioxide and water vapor.
C) gases that are not well mixed.
D) oxygen only.
- 79) The top of Earth's atmosphere is approximately _____
A) 2,000 km (1,243 mi) above Earth's surface. B) 3,200 km (1,988 mi) above Earth's surface.
C) 1,000 km (621 mi) above Earth's surface D) 480 km (300 mi) above Earth's surface.
- 80) Which of the following is TRUE about Earth's atmosphere? _____
A) It allows gamma rays and X-rays reach the surface.
B) It is denser at higher altitudes.
C) The ozonosphere and ionosphere shield the surface from harmful radiation.
D) Variable gases are the dominant gases in the atmosphere.
- 81) Why are humans and other living things NOT crushed by the pressure of the atmosphere? _____
A) Atmospheric pressure increases with altitude and is, therefore, lowest near Earth's surface.
B) Humans and other living things exert pressure outward, counterbalancing atmospheric pressure.
C) While the atmosphere exerts pressure, it is a negligible amount.
D) The tropopause serves as a buffer against the pressure exerted by the atmosphere.

- 82) Three criteria used for classification of the atmosphere are 82) _____
A) composition, temperature, and function. B) structure, origin, evolution.
C) structure, origin, temperature. D) composition, origin, evolution.
- 83) Based on composition, the atmosphere is divided into 83) _____
A) the troposphere and the stratosphere.
B) two broad classifications: homosphere and heterosphere.
C) one continuous region.
D) two functional areas that absorb radiation from the Sun.
- 84) Based on temperature, the atmosphere is divided into 84) _____
A) two functional areas that absorb radiation from the Sun.
B) four regions: ranging from the troposphere to the thermosphere.
C) nitrogen, oxygen, argon.
D) two broad regions.
- 85) Based on function, the atmosphere has 85) _____
A) five regions beginning with the outermost thermosphere.
B) one continuous region.
C) the troposphere and the stratosphere.
D) two areas that absorb radiation from the Sun.



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- 86) Based on the image, which of the following must be TRUE?

A) Hydrogen has a higher atomic weight than oxygen.

B) All but 0.001 percent of the atmosphere is accounted for within the troposphere.

C) The ozonosphere stretches from Earth's surface to approximately 50 km (30 mi.)

D) The ozonosphere corresponds with the stratosphere.

86) _____
- 87) The thermosphere closely corresponds to

A) the ionosphere.

B) the exosphere.

C) the heterosphere.

D) the homosphere.

E) both the ionosphere and the heterosphere.

87) _____
- 88) At sea level, the pressure of the atmosphere is about _____ kg/cm².

A) 2.6

B) 6.7

C) 1.0

D) 8.2

88) _____

- 89) Which of the following is FALSE? 89) _____
A) Air molecules exert air pressure through their motion, size, and number.
B) Air pressure decreases through the troposphere then increases in the stratosphere.
C) Air pressure decreases with increasing altitude.
D) The atmosphere exerts a force of 1 kg/cm^2 ; i.e., 14.7 lb/in^2 .
- 90) Half of the total mass of Earth's atmosphere lies below an elevation of _____ meters. 90) _____
A) 8300 B) 11,000 C) 5500 D) 14,000
- 91) The outermost region of the atmosphere, based on composition, is the 91) _____
A) troposphere. B) homosphere. C) thermosphere. D) heterosphere.
- 92) The heterosphere is the layer of the atmosphere in which the gases are _____ because of 92) _____
_____.
A) well mixed; thermal motions (i.e., convection)
B) well mixed; the influence of gravity which causes gases of different weight to diffuse randomly
C) poorly mixed; the influence of gravity which causes gases of different weight to separate into layers
D) poorly mixed; thermal motions (i.e., convection)
- 93) Which of the following is TRUE of gases in the heterosphere? 93) _____
A) Nitrogen occurs at the top, followed—in descending order—by helium, oxygen and hydrogen.
B) The nitrogen and oxygen occur at the top of the heterosphere and the hydrogen and helium at the bottom.
C) The hydrogen, helium, oxygen and nitrogen are well mixed.
D) The hydrogen and helium occur at the top of the heterosphere, and the nitrogen and oxygen at the bottom.
- 94) The region of the atmosphere that is so evenly mixed that it behaves as if it were a single gas is the 94) _____
A) homosphere. B) heterosphere. C) thermosphere. D) exosphere.
- 95) The thermopause is located 95) _____
A) approximately 480 km (300 mi.) above Earth's surface.
B) wherever -90°C (-130°F) is recorded.
C) at the bottom of the homosphere.
D) between the mesosphere and the thermosphere.
- 96) The highest temperatures in the atmosphere occur in the 96) _____
A) troposphere B) mesosphere. C) stratosphere. D) thermosphere.
- 97) The tropopause altitude is highest _____ because of the _____. 97) _____
A) at the equator; intense heating from the surface
B) during the summer; increased atmospheric pressure
C) at the poles; diffuse solar radiation
D) during the winter; Sun's direct rays hitting the Tropic of Capricorn

- 98) Despite its high temperatures, why would the thermosphere feel cold to humans? 98) _____
A) The number of molecules is not high enough to transfer heat to human's skin.
B) The atmosphere is denser in the thermosphere and this pressure reduces heat transfer.
C) The average kinetic energy is actually less in the thermosphere than the troposphere.
D) Humans would die due to pressure changes before they could experience the intense heat.
- 99) Temperatures within the stratosphere 99) _____
A) remain about the same from the tropopause to the stratopause.
B) increase with altitude because of the absorption of ultraviolet radiation.
C) decrease with altitude according to the normal lapse rate.
D) decrease with altitude due to radiation losses.
- 100) The high temperature in the upper thermosphere 100) _____
A) is more a measure of sensible temperature than kinetic energy.
B) is more a measure of kinetic energy than sensible temperature.
C) produces a tremendous amount of heat transfer.
D) is produced by the absorption of UV radiation.
- 101) In which two atmospheric zones does temperature increase with altitude? 101) _____
A) Stratosphere and thermosphere
B) Stratosphere and mesosphere
C) Troposphere and mesosphere
D) Troposphere and stratosphere
- 102) In which two atmospheric zones does temperature decrease with altitude? 102) _____
A) Troposphere and mesosphere
B) Troposphere and stratosphere
C) Stratosphere and thermosphere
D) Stratosphere and mesosphere
E) None of the above—temperature decreases with increasing altitude in all layers of the atmosphere.
- 103) Why does temperature increase with altitude in the stratosphere? 103) _____
A) Ozone acts as a greenhouse gas which traps ultraviolet energy radiated by Earth's surface.
B) Chlorofluorocarbons increase ozone concentrations, which enhance temperature.
C) Ozone absorbs ultraviolet radiation from the Sun and then reradiates it at infrared wavelengths.
D) Due to the effects of the normal lapse rate effect
- 104) Why is the hole in the ozone greatest over Antarctica? 104) _____
A) South American countries have not ratified the Montreal Protocol and continue to release ozone-destroying CFCs.
B) Chlorine freed from CFCs elsewhere migrate to the Antarctic region, where they are trapped by the polar vortex.
C) Ozone, a greenhouse gas which traps ultraviolet energy radiated from Earth's surface, has highest concentration in Antarctica.
D) The ozone hole is a natural phenomenon related to high polar stratospheric clouds.
- 105) Which of the following best describe conditions in the mesosphere? 105) _____
A) High altitude noctilucent clouds form in the mesosphere.
B) Temperatures rapidly increase with altitude in the mesosphere.
C) The mesosphere is completely within the heterosphere.
D) The mesosphere is located between the troposphere and the stratosphere.

- 106) The high temperatures in the thermosphere occur because 106) _____
A) infrared radiation from the ground heats this layer more than any other layer.
B) carbon dioxide has accumulated to very high levels in this layer.
C) it is in direct contact with high energy solar radiation.
D) high intensity solar radiation causes strong chemical reactions with ozone, and this heats the layer to very high temperatures.
E) methane is such an effective greenhouse gas.
- 107) Which of the following is TRUE of the ionosphere? 107) _____
A) It is being depleted through interactions with human-produced chlorofluorocarbons.
B) It primarily absorbs harmful infrared wavelengths.
C) The region principally absorbs gamma rays, X-rays, and interacts with the solar wind.
D) All radio signals pass through this region virtually unaffected.
- 108) Which of the following lists the CORRECT sequence of gases, from most to least concentration, in terms of percentage within the homosphere? 108) _____
A) Oxygen, nitrogen, neon, hydrocarbons, carbon dioxide
B) Nitrogen, oxygen, argon, carbon dioxide, trace gases
C) Oxygen, ozone, nitrogen, PAN, carbon dioxide
D) Nitrogen, argon, oxygen, xenon, carbon dioxide
- 109) The three stable (i.e., nonvariable) gases in the atmosphere, in order of abundance from most to least, are 109) _____
A) oxygen, carbon dioxide, argon. B) nitrogen, oxygen, argon.
C) carbon dioxide, argon, oxygen. D) oxygen, argon, nitrogen.
- 110) The two most abundant gases in the atmosphere are 110) _____
A) oxygen and carbon dioxide. B) nitrogen and oxygen.
C) water vapor and carbon dioxide. D) nitrogen and water vapor.
- 111) Nitrogen (N₂) is 111) _____
A) a product of the radioactive decay of a form of potassium in the crust.
B) now measured at 20.946% by volume in the homosphere.
C) cycled through the environment via the activity of bacteria.
D) a key component of life, integrated into our bodies directly from the air.
- 112) Which of the following is TRUE of nitrogen? 112) _____
A) Nitrogen is a variable gas.
B) The human body obtains the nitrogen it needs from the air.
C) There is very little nitrogen in the atmosphere.
D) The nitrogen that the human body needs is derived from food—not the air.
- 113) Which of the following is NOT true of carbon dioxide? 113) _____
A) It is critically important in regulating the temperature of the planet.
B) It occurs in large amounts in the atmosphere relative to nitrogen and oxygen.
C) Today, it far exceeds its natural range of 180 to 300 pp.
D) Overall, atmospheric CO₂ has increased by 16% from 1992 to 2012.

- 114) About half of Earth's crust consists of compounds containing _____
A) nitrogen.
B) oxygen.
C) ozone.
D) argon.
E) carbon dioxide.
- 115) Oxygen (O₂) is _____
A) a by-product of photosynthesis.
B) now measured at 78.084% by volume in the homosphere.
C) one of the gases from Earth's earliest atmospheres.
D) a gas which principally originates from volcanic sources.
- 116) Which stable (nonvariable) gas in the atmosphere is inert and unusable in life processes? _____
A) Carbon dioxide B) Nitrogen C) Argon D) Oxygen
- 117) A by-product of photosynthesis is _____
A) xenon. B) argon. C) nitrogen. D) oxygen.
- 118) Which of the gases listed below has accumulated in the atmosphere as a result of biological processes? _____
A) Water vapor B) Nitrogen C) Argon D) Oxygen
- 119) Which is TRUE of the amount of CO₂ in our atmosphere? _____
A) The level of CO₂ increased at the rate of 1.1% per year from 1990 to 1999.
B) The level of CO₂ has been decreasing at the rate of 3.1% per year since 2000.
C) CO₂ is the most abundant gas in the atmosphere.
D) The level of CO₂ has been much higher during the past 800,000 years than it is now.
- 120) Which is TRUE of the level of CO₂ in our atmosphere? _____
A) The level of CO₂ is decreasing at 3.1% per year.
B) The rate of increase leveled out in 1976.
C) It is reached 400 ppm in 2013.
D) The level of CO₂ was much higher in 1955 than today.
- 121) Which of the following is TRUE regarding the depletion of ozone in the ozonosphere? _____
A) It results from chemical reactions with chlorine derived from CFCs.
B) The depletion is restricted to the arctic and antarctic regions.
C) It results from the burning of fossil fuels.
D) The notion that ozone is being depleted as a result of human activity has little scientific evidence to support it.
- 122) The ozonosphere is critical to life because it _____
A) absorbs visible light wavelengths. B) absorbs most ultraviolet wavelengths.
C) affects temperatures. D) produces the auroras.

- 123) The homosphere is so called because 123) _____
A) the blend of gases is nearly uniform throughout.
B) scientists have been unable to determine its composition and assume it is homogeneous.
C) it contains only one gas, nitrogen.
D) it is the habitable sphere for humans (*Homo sapiens*).
- 124) Which of the following is TRUE of the mesosphere? 124) _____
A) It contains clouds that are visible at night.
B) It is the warmest layer of the atmosphere.
C) It has the greatest vertical extent of all atmospheric layers.
D) Temperatures are uniform through the zone.
- 125) In 1974, Dr. Rowland and Dr. Molina made what observation regarding ozone (O₃)? 125) _____
A) Ground-level O₃ irritates human eyes and respiratory systems.
B) Automobile exhaust and sunlight were producing photochemical smog.
C) Anthropogenic O₃ releases were a major culprit in global warming.
D) The photochemical interactions of chlorofluorocarbons and O₃.
- 126) Which of the following is TRUE of chlorofluorocarbons? 126) _____
A) They have been used as propellants in spray cans.
B) They are used to make foam products.
C) They are used in refrigeration systems.
D) All of the above are true.
- 127) Which of the following is TRUE of chlorofluorocarbons? 127) _____
A) The CFC molecules react with ultraviolet light to release chlorine which then destroys ozone.
B) The CFC molecules react with ultraviolet light to release fluorine which then destroys ozone.
C) The CFC molecules react with ultraviolet light to release carbon which then destroys ozone.
D) Most of the CFC-induced ozone destruction is occurring near the equator, rather than near the poles.
- 128) The Montreal Protocol 128) _____
A) created the Intergovernmental Panel on Climate Change.
B) established a framework to address acid precipitation.
C) aims to reduce and eliminate all ozone depleting substances.
D) is ineffective because so few countries have ratified it.
E) only addresses CFCs.
- 129) Why is stratospheric ozone loss a concern? 129) _____
A) Stratospheric ozone contributes to the brilliant auroras.
B) Stratospheric ozone is a component of photochemical smog.
C) Stratospheric ozone absorbs harmful ultraviolet radiation (UVB and UVC).
D) Stratospheric ozone is a major greenhouse gas; its loss will contribute to the cooling of the planet.

- 130) Which of the following is NOT true of UV exposure? 130) _____
- A) UV radiation varies spatially according to the season, local weather conditions, and overhead ozone depletion.
 - B) UV radiation is potentially harmful and individuals should take appropriate precautions depending on the UV index.
 - C) UVA radiation is not filtered by the ozone layer and amounts for about 95% of all UV radiation reaching Earth's surface.
 - D) Only exposure to UVA is a concern, not exposure to UVB and UVC.
- 131) Which of the following is TRUE regarding ozone depletion in Antarctica? 131) _____
- A) The atmosphere above Antarctica has experienced a complete loss of protective ozone.
 - B) Maximum ozone depletion occurs during the Antarctic spring, following the development of polar stratospheric clouds in winter.
 - C) There has actually been a decrease in ultraviolet levels measured at the surface—which is contrary to what is predicted by ozone depletion models.
 - D) Increasing levels of ultraviolet radiation have not actually been measured at this time.
- 132) The atmospheric portion of the biosphere occurs in the 132) _____
- A) lithosphere.
 - B) troposphere.
 - C) ozonosphere.
 - D) heterosphere.
- 133) The tropopause occurs at a _____ elevation above the tropics than above the poles because 133) _____
- A) higher; the stratosphere is thinner over the tropics and this allows the troposphere to expand
 - B) lower; the troposphere weighs more in the tropics and so it sinks
 - C) lower; the stratosphere is thicker over the tropics and so it compresses the troposphere
 - D) higher; the troposphere is hotter in the tropics, and this causes the air to rise to greater heights
- 134) Which of the following is CORRECT regarding lapse rates in the troposphere? 134) _____
- A) The normal lapse rate is always the same as the dry adiabatic rate (DAR).
 - B) The term "normal (average) lapse rate" refers to the actual lapse rate in effect at any particular time
 - C) The environmental lapse rate refers to the actual lapse rate at any particular time and may differ substantially from the normal lapse rate.
 - D) Temperatures generally increase with altitude in the troposphere.
- 135) Which atmospheric zone supports the biosphere and is the region of principle weather activity? 135) _____
- A) thermosphere
 - B) stratosphere
 - C) mesosphere
 - D) troposphere
- 136) Which of the following is NOT true about the troposphere? 136) _____
- A) The bulk of all water vapor occurs in the troposphere.
 - B) Approximately 90% of the total mass of the atmosphere is within the troposphere.
 - C) The altitude of the upper limits of the troposphere (the tropopause) varies with season and latitude.
 - D) Temperatures increase with altitude in the troposphere because the higher in altitude, the closer to the sun.

- 137) In terms of the passage of incoming solar radiation (insolation), which is the CORRECT order? 137) _____
A) Thermosphere, mesosphere, stratosphere, troposphere
B) Mesosphere, thermosphere, troposphere, stratosphere
C) Troposphere, stratosphere, mesosphere, thermosphere
D) Stratosphere, troposphere, thermosphere, mesosphere
- 138) Air pollution consists of 138) _____
A) solely anthropogenic gases, particles, and other substances in amounts that cause damage to the environment or are harmful to humans.
B) a distinct class of gases, particles, and other substances that the EPA has deemed worthy of regulating.
C) solely natural gases, particles, and other substances in amounts that cause damage to the environment or are harmful to humans.
D) both natural and anthropogenic gases, particles, and other substances in amounts that cause damage to the environment or are harmful to humans.
- 139) Which of the following is TRUE? 139) _____
A) Though infrequent, natural events that produce air pollution may cover large areas.
B) Natural sources of air pollution are not a concern in terms of human health.
C) Natural sources of air pollution are a relatively new occurrence.
D) There is no reason to be concerned about natural sources of air pollution.
- 140) Temperature inversions occur 140) _____
A) during episodes of reduced air pollution.
B) when surface temperatures are cooler than overlying air.
C) when surface temperatures are higher than overlying layers of air.
D) when there is good air drainage and ventilation of the surface air.
- 141) Why are temperature inversion noteworthy regarding air pollution? 141) _____
A) Mesospheric conditions are replicated in the troposphere.
B) Air pollution is completely inhibited from forming.
C) Surface pollution is moderated by allowing surface air to mix with the air above.
D) Vertical mixing of pollutants is halted, trapping the pollutants under the inversion layer.
- 142) Sources of natural variable pollutants and materials include all of the following EXCEPT 142) _____
A) plants and decaying plants. B) industrial activity.
C) forest fires. D) volcanoes.
- 143) With regards to carbon monoxide (CO), which of the following is FALSE? 143) _____
A) Few effects of CO on humans have been identified.
B) It is a colorless, odorless and tasteless gas.
C) Anthropogenic CO is principally produced by automobiles.
D) Natural CO is produced by decaying organic debris, forest fires, or organic matter decomposition.
- 144) At CO levels of 100 ppm or less in the bloodstream 144) _____
A) there is no noticeable health effect.
B) humans might develop headaches and suffer from impaired vision and judgment.
C) carbon monoxide can contribute to acid rain.
D) the human bloodstream is unaffected.

- 145) Carbon monoxide is potentially dangerous because it _____
A) replaces oxygen on red blood cells. B) causes genetic mutations.
C) causes cancer. D) causes birth defects.
- 146) The reaction of automobile exhaust and ultraviolet light _____
A) is affecting the stratospheric ozone concentration.
B) forms smoke and fog.
C) produces industrial smog.
D) produces photochemical smog.
- 147) Photochemical smog developed with the advent of _____
A) the industrial revolution. B) smelting of ores.
C) automobiles. D) coal burning stoves.
- 148) Photochemical reactions produce _____
A) ozone and peroxyacetyl nitrates (PAN).
B) carbon monoxide.
C) particulates such as dust, dirt, soot, and ash.
D) principally sulfur dioxides.
- 149) Acid deposition results from _____
A) nitric acid and sulfuric acid, formed from nitrogen oxides and sulfur dioxide.
B) hydrocarbons, nitrogen dioxide, and carbon monoxide.
C) carbonic acids dissolved from atmospheric carbon dioxide.
D) hydrochloric acid, formed from the combination of hydrogen chloride and water.
- 150) O₃ in the lower troposphere _____
A) has not been found to cause any damage to crops and plants.
B) causes lung irritation, asthma, and susceptibility to respiratory illness in humans.
C) forms acid rain.
D) is not associated with transportation.
- 151) Which of the following is NOT a result of acid deposition? _____
A) Increase in nutrients in forest ecosystems
B) Acidification of lakes
C) Formation of highly toxic methylmercury in acidified lake waters
D) Release of aluminum and magnesium from clay mineral in soils
- 152) Which of the following statements about ozone is FALSE? _____
A) Tropospheric ozone is a component of photochemical smog.
B) Ozone in the stratosphere protects human health.
C) Stratospheric ozone absorbs harmful radiation.
D) Ozone in the lower atmosphere protects human health.
- 153) The single major source for photochemical reactants in the United States are _____
A) steel mills and the agricultural industry.
B) rapid transit, buses, and excessive use of light rail systems.
C) electrical generation stations.
D) automobiles.

- 154) Industrial smog is _____
A) principally associated with coal-burning industries.
B) principally associated with transportation.
C) a relatively recent problem that developed during the latter half of this century.
D) associated with photochemistry.
- 155) Natural acidic rainfall primarily results from the interaction of water with _____
A) nitrogen oxides.
B) PAN.
C) sulfur oxides.
D) ozone.
E) carbon dioxide.
- 156) Which of the following is NOT true regarding the oxides of sulfur and nitrogen? _____
A) They are causing major environmental problems in Europe and Asia.
B) They are produced by industry and transportation.
C) They lead to the formation of airborne sulfuric and nitric acid.
D) They are naturally occurring and, therefore, not considered pollutants.
- 157) What two pollutants react with water to produce acid rain? _____
A) Sulfur oxides and PAN
B) Sulfur oxides and nitrogen oxides
C) Sulfur oxides and ozone
D) Nitrogen oxides and ozone
- 158) Which of the following is TRUE regarding acid deposition? _____
A) Acids have been causally linked to fish kills in the northeastern United States.
B) No lakes or streams have been damaged by acid precipitation.
C) Acid precipitation is precipitation that measures more than 7.0 on a pH scale.
D) Soil processes generally are not affected by acid precipitation.
- 159) The lower the pH of a liquid _____
A) the more chemical reactive it is.
B) the more acidic it is.
C) the more neutral it is.
D) the more basic (alkaline) it is.
- 160) Given the pH scale is logarithmic where each whole number represents a tenfold increase, a rain with a pH of 3 is how many times more acidic than rain with a pH of 7? _____
A) 3
B) 4
C) 100
D) 10,000
E) 1,000,000,000
- 161) Based on human-induced changes to the atmosphere, some have tentatively labeled Earth's next atmosphere the _____
A) ozonosphere.
B) anthropogenic atmosphere.
C) living atmosphere.
D) pollution sphere.
E) modern atmosphere.

- 162) What percent age of the U.S. population lives with unhealthy levels of air pollution? 162) _____
A) 41% B) 62% C) 59% D) 33%
- 163) The main ingredients in photochemical smog are 163) _____
A) PAN, carbon monoxide, and particulate matter.
B) ozone, PAN, and nitric acid.
C) PAN, nitric acid, and carbon monoxide.
D) ozone, particulate matter, and carbon monoxide.
- 164) Particulate matter 164) _____
A) can include material in smoke. B) has not been associated with health risks.
C) is, by definition, larger than 100 microns. D) has not yet been studied by scientists.
- 165) The Clean Air Act 165) _____
A) is proposed legislation to address climate change.
B) has resulted in the significant reduction in various atmospheric pollutants.
C) was ratified by the U.S. Congress in 1987.
D) has not met its stated objectives.
- 166) According to the EPA, the direct benefits of the Clean Air Act are worth 166) _____
A) \$500 million. B) \$500 billion. C) \$2 trillion. D) \$22 trillion.
- 167) In 2010, the Clean Air Act 167) _____
A) was severely weakened by the Congress in a new bill that was ultimately vetoed by the President.
B) resulted in some 4 million lost works days.
C) cost \$27 billion to implement, but saved an estimated \$110 billion.
D) was repealed.
- 168) The Clean Air Act 168) _____
A) has saved the country several trillion dollars.
B) is no longer in effect.
C) did not result in significant reductions of any major air pollutants.
D) was made stronger during the Reagan administration.
- 169) Which best describes the cost-benefit results of the first 20 years of the Clean Air? 169) _____
A) While costs have exceed benefits 2 to 1, benefits are expected to increase in the coming decades.
B) Because many of the benefits of clean air are intangible, it is not possible to make such comparisons.
C) Costs have been far greater than the benefits.
D) In 2010, alone, estimated benefits exceeded costs by 4 to 1.
- 170) In 2012, Felix Baumgartner became famous for 170) _____
A) completing the longest spacewalk from a Space Shuttle.
B) becoming the first individual to complete a free-fall from the stratosphere.
C) breaking Joseph Kittinger's long-held height and speed free-fall record.
D) discovering the true composition of the stratospheric ozone layer.

- 171) Which of the following is NOT cited as a factor in helping to reduce air pollution? 171) _____
A) Increased use of coal as an energy source.
B) Increased vehicle fuel-efficiency.
C) Stricter air emission regulations.
D) Use of more alternative, clean energy sources such as wind and solar.
- 172) Why is normal precipitation always slightly acidic? 172) _____
A) Sulfur dioxide from volcanic explosions combines with water to form sulfuric acid.
B) Nitrogen fixing bacteria form nitric acids which evaporate into the atmosphere.
C) Chlorine, in the presence of sunlight and hydrogen, is converted to hydrochloric acid.
D) Precipitation dissolved carbon dioxide to form carbonic acid.
- 173) Which of the following is an example of humans influencing solar energy or seasonality? 173) _____
A) Longer summers due to climate change have altered migration patterns of some animals.
B) Solar energy drives ecosystem processes that benefit humans.
C) Seasonal change determines the rhythm of life and food resources.
D) Solar winds affect communication systems on Earth.

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 174) The Solar System, Sun, and Earth formed about 4.6 billion years ago. 174) _____
- 175) The Milky Way galaxy contains approximately 300 billion stars, of which the Sun is an average sized star. 175) _____
- 176) The Milky Way is about 100,000 light-years from side to side. 176) _____
- 177) At the speed of light, Earth is an average of only 6 minutes and 40 seconds from the Sun. 177) _____
- 178) A light-year is an astronomical unit of length equal to approximately 9.5 trillion kilometers. 178) _____
- 179) Earth is closest to the Sun in early January. 179) _____
- 180) Our solar system is located towards the middle of the Milky Way galaxy. 180) _____
- 181) Earth is farthest from the Sun at perihelion and closest at aphelion. 181) _____
- 182) Earth is closest to the Sun in early July. 182) _____
- 183) According to the planetesimal hypothesis, solar systems condense from nebular dust and gas. 183) _____
- 184) In order to study the planetesimal hypothesis, astronomers study this process in other parts of the Galaxy. 184) _____
- 185) The distance from the Sun to Earth does not vary throughout the year. 185) _____
- 186) The Sun's principal outputs consist of the solar wind and radiant energy. 186) _____
- 187) A solar maximum is a period during which sunspots are numerous. 187) _____

- 188) Auroras are associated with massive bursts of solar wind called coronal mass ejections. 188) _____
- 189) The magnetosphere deflects the solar wind toward Earth's two poles. 189) _____
- 190) Auroras are mainly visible at lower latitudes, from the equator to about 15° N/S. 190) _____
- 191) The electromagnetic spectrum only shows the wavelengths associated with solar radiation. 191) _____
- 192) The electromagnetic spectrum of radiant energy travels in waves at the speed of light in all directions from the Sun. 192) _____
- 193) The Sun emits radiant energy composed almost entirely of ultraviolet and gamma-ray wavelengths. 193) _____
- 194) Shorter wavelengths tend to have a lower frequency. 194) _____
- 195) The correct order for wavelengths of electromagnetic radiation from shortest to longest is: X-rays, infrared, radio waves, visible light, and ultraviolet. 195) _____
- 196) The Sun's radiant energy is composed primarily of visible light and infrared wavelengths. 196) _____
- 197) Earth radiates energy primarily in the ultraviolet wavelengths. 197) _____
- 198) Intercepted solar energy is called insolation and is measured as the solar constant at the top of the atmosphere. 198) _____
- 199) The uneven distribution of insolation at the thermopause is caused by Earth's curvature, with only the subsolar point receiving sunlight from directly overhead. 199) _____
- 200) The solar constant varies by latitude. 200) _____
- 201) The amount of the solar energy received by a given location varies depending upon the season. 201) _____
- 202) All points on Earth's surface experience the subsolar point at some moment during the year. 202) _____
- 203) The seasons are caused by the changing amounts of energy received at Earth as a result of Earth's elliptical orbit. 203) _____
- 204) The Sun's height in the sky above the horizon is termed its altitude. 204) _____
- 205) Seasonality involves the variability of both daylength and the altitude of the Sun. 205) _____
- 206) Rotation is Earth's motion on its axis; revolution is its orbit around the Sun. 206) _____
- 207) The speed of Earth's rotation is fastest at the poles. 207) _____
- 208) This variation in rotational velocity establishes the effect of the Coriolis force. 208) _____

- 209) Earth rotates east to west, or clockwise, when viewed from above the North Pole. 209) _____
- 210) Earth's axis is tilted 19.5° relative to the plane of the ecliptic. 210) _____
- 211) Earth's axial alignment varies throughout the year. 211) _____
- 212) Earth's spherical shape is not a factor with regards to seasonality. 212) _____
- 213) The subsolar point is at the Tropic of Cancer on or about December 21. 213) _____
- 214) All places on Earth experience the same daylength on or about March 21. 214) _____
- 215) The Sun is directly overhead north of 23.5° north latitude twice a year. 215) _____
- 216) The June solstice marks the beginning of the Southern Hemisphere's winter. 216) _____
- 217) On the Northern Hemisphere's summer solstice, areas above Arctic Circle are completely within the circle of illumination. 217) _____
- 218) The subsolar point's maximum latitude is 47° N/S. 218) _____
- 219) The beginning of the Northern Hemisphere spring occurs when the subsolar point is at the Tropic of Cancer. 219) _____
- 220) The sun rises at the North Pole on the March equinox and remains over the horizon for the following six months. 220) _____
- 221) Lower latitudes experience the greatest seasonal variation throughout an average year. 221) _____
- 222) While seasonality can affect humans, humans cannot affect seasonality. 222) _____
- 223) Weather (rain, fog, storms, etc.) occurs primarily in the troposphere. 223) _____
- 224) Based on the criteria of composition, the atmosphere is divided into two broad regions: the ionosphere and the ozonosphere. 224) _____
- 225) The heterosphere has a layered structure, whereas the homosphere occurs as an even mixture of gases. 225) _____
- 226) Of the atmosphere's thermal layers, the stratosphere is the hottest. 226) _____
- 227) When the Sun is active (e.g. more sunspots and eruptions), the thermosphere increases in altitude. 227) _____
- 228) Despite the thermosphere's high temperature, the density of molecules is so low little actual heat is produced. 228) _____
- 229) The ionosphere resides principally within the thermosphere, and the ozonosphere resides within the stratosphere. 229) _____

- 230) The aurora occur primarily in the ozonosphere. 230) _____
- 231) Air pressure is produced through the motion, size, and number of air molecules. 231) _____
- 232) Captain Kittenger came close to the speed of sound during his record-breaking sky dive. 232) _____
- 233) The atmosphere exerts an average force of approximately 1 kg/cm^2 (14.7 lbs/in^2) at sea level. 233) _____
- 234) Approximately fifty percent of the atmosphere is compressed by gravity below an elevation of 5500 m (18,000 ft). 234) _____
- 235) The principal gases of the homosphere (by volume) are nitrogen, helium, and argon. 235) _____
- 236) Atmospheric pressure decreases with altitude. 236) _____
- 237) The ozone layer protects Earth's surface from most of the incoming ultraviolet radiation. 237) _____
- 238) The amount of CO_2 in the atmosphere is higher now than any time in the last 800,000 years. 238) _____
- 239) By volume, nitrogen is the most abundant gas in the modern homosphere. 239) _____
- 240) Because percentage of carbon dioxide in the atmosphere is so small, it is considered an insignificant gas. 240) _____
- 241) Oxygen is a byproduct of photosynthesis. 241) _____
- 242) Depletion of the ozone layer is happening principally because of natural circulation dynamics in the upper atmosphere, not chemical reactions. 242) _____
- 243) The role of CFCs in the depletion of stratospheric ozone was first hypothesized in the 1970s. 243) _____
- 244) The ozone hole has almost completely recovered. 244) _____
- 245) The normal lapse rate for temperature decreases is an average of 3°C per 1000 m. 245) _____
- 246) Problems with air pollution occurred as far back in time as the Roman period (2000 years ago). 246) _____
- 247) Natural sources produce greater quantities of air pollutants than do sources attributable to humans. 247) _____
- 248) Temperature inversions have little effect on air pollution. 248) _____
- 249) Pollution generated in one country can cause problems in other countries. 249) _____
- 250) Atmospheric circulation ultimately connects all places on Earth to one another. 250) _____
- 251) The higher the UV Index, the faster a person will sunburn. 251) _____

- 252) Photochemical smog results from the interaction of sunlight with the combustion products of automobiles. 252) _____
- 253) Normal rainfall has a neutral pH. 253) _____
- 254) Rainfall is naturally acidic due to the presence of carbonic acids. 254) _____
- 255) Annually, acid deposition costs and estimated \$50 billion in the United States, Canada and Europe. 255) _____
- 256) Air pollution can easily cross national boundaries. 256) _____
- 257) So far, the Arctic region has been free of air pollution. 257) _____
- 258) Ground-level ozone is the principal ingredient of photochemical smog. 258) _____
- 259) The Clean Air Act actually saves fewer than 1000 lives per year. 259) _____
- 260) The Clean Air Act has not been cost effective. 260) _____
- 261) Longer falls and earlier springs caused by climate change have lengthened the growing season in the United States. 261) _____
- 262) Scientists predict that air quality will continue to improve even without emission regulations. 262) _____
- 263) Increased fuel efficiency may help mitigate urban pollution. 263) _____

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 264) Why is the light year a useful unit of measurement for astronomical distances?
- 265) Describe the causes and consequences of the uneven distribution of insolation.
- 266) Describe the radiation emitted from both the Sun and Earth in terms of the electromagnetic spectrum.
- 267) How does the daily insolation received at the top of the atmosphere vary annual from lower to higher latitudes.
- 268) Define these terms: thermopause, insolation, solar constant, subsolar point.
- 269) What the the primary factors to contribute to seasonality on Earth.
- 270) Explain the significance of each of the equinoxes and solstices.
- 271) What is the circle of illumination and its importance?
- 272) For where you live, how do daylength and the Sun's altitude vary throughout the year?
- 273) Why are seasonal changes less noticeable near the equator than at midlatitudes?

- 274) Draw and label a diagram of the Earth–Sun relationship for the four seasons. Include the average distance from Earth to the Sun, the location of the subsolar point for each seasonal event, and the name and date for each of the solstices and equinoxes.
- 275) The atmosphere can be studied using three basic criteria: composition, temperature, and function. Discuss these three classifications, giving relevant details of each.
- 276) Trace the changing temperature of the atmosphere from Earth's surface to the top of the thermosphere.
- 277) List and describe the four main gases of the homosphere. Which is least important to life?
- 278) Ozone is found in both the ozonosphere and as a component of smog. Discuss its properties and function in the ozonosphere, and also its destruction by anthropogenic chemicals and the international efforts undertaken to ameliorate the destruction. Also examine ozone's production and effects at ground level.
- 279) What is the role of ozone in the ozonosphere? Discuss and explain the chemical reactions that lead to its destruction.
- 280) List and describe at least five natural sources of air pollution, as well as the source and effects of at least eight human-generated air pollutants.
- 281) What have been some of the significant achievements of the Clean Air Act?
- 282) Discuss ways in which anthropogenic climate change affects seasonality.
- 283) Describe how anthropogenic activity may influence both the troposphere and the stratosphere.

Answer Key

Testname: UNTITLED2

1) B

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.2 **Locate** Earth in the Solar System and Galaxy.

2) C

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.2 **Locate** Earth in the Solar System and Galaxy.

3) B

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.3 **Summarize** the origin, formation, and development of Earth.

4) B

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.3 **Summarize** the origin, formation, and development of Earth.

5) B

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.3 **Summarize** the origin, formation, and development of Earth.

6) A

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.2 **Locate** Earth in the Solar System and Galaxy.

7) A

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.5 **Describe** the Sun's operation.

8) C

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.5 **Describe** the Sun's operation.

Answer Key

Testname: UNTITLED2

9) B

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.2 **Locate** Earth in the Solar System and Galaxy.

10) D

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

11) A

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.4 **Reconstruct** Earth's annual orbit about the Sun.

12) A

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.4 **Reconstruct** Earth's annual orbit about the Sun.

13) B

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard:

Global Sci. LO:

LO:

14) D

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.6 **Explain** the characteristics of the solar wind.

15) C

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.6 **Explain** the characteristics of the solar wind.

16) C

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.6 **Explain** the characteristics of the solar wind.

Answer Key

Testname: UNTITLED2

17) B

Chapter/section: 2.2 Solar Energy: From Sun to Earth
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.6 **Explain** the characteristics of the solar wind.

18) B

Chapter/section: 2.2 Solar Energy: From Sun to Earth
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.6 **Explain** the characteristics of the solar wind.

19) B

Chapter/section: 2.2 Solar Energy: From Sun to Earth
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

20) A

Chapter/section: 2.2 Solar Energy: From Sun to Earth
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 3. Read and interpret graphs and data.
LO: 2.6 **Explain** the characteristics of the solar wind.

21) B

Chapter/section: 2.2 Solar Energy: From Sun to Earth
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.6 **Explain** the characteristics of the solar wind.

22) B

Chapter/section: 2.2 Solar Energy: From Sun to Earth
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

23) A

Chapter/section: 2.2 Solar Energy: From Sun to Earth
Bloom's Taxonomy: 3/4 Application/Analysis
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

24) C

Chapter/section: 2.2 Solar Energy: From Sun to Earth
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 3. Read and interpret graphs and data.
LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

Answer Key

Testname: UNTITLED2

25) D

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

26) B

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

27) D

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

28) E

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

29) B

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

30) A

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

31) D

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

32) B

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

Answer Key

Testname: UNTITLED2

33) C

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

34) A

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

35) A

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

36) D

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

37) B

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

38) C

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

39) D

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

40) B

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

Answer Key

Testname: UNTITLED2

41) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

42) C

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

43) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

44) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength—Earth's seasonality.

45) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength—Earth's seasonality.

46) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength—Earth's seasonality.

47) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

48) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

Answer Key

Testname: UNTITLED2

49) C

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

50) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

51) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

52) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

53) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

54) B

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

55) B

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.4 **Reconstruct** Earth's annual orbit about the Sun.

56) E

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

Answer Key

Testname: UNTITLED2

57) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

58) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

59) B

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

60) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

61) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

62) B

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

63) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

64) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

Answer Key

Testname: UNTITLED2

65) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

66) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

67) A

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

68) C

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

69) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

70) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

71) C

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

72) B

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

Answer Key

Testname: UNTITLED2

73) B

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

74) C

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

75) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

76) D

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

77) C

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

78) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

79) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis–composition, temperature, and function

80) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis–composition, temperature, and function

Answer Key

Testname: UNTITLED2

81) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

82) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

83) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

84) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

85) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

86) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

87) E

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

Answer Key

Testname: UNTITLED2

88) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

89) B

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

90) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

91) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

92) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

93) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

94) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

95) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

Answer Key

Testname: UNTITLED2

96) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

97) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

98) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

99) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

100) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

101) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

102) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

Answer Key

Testname: UNTITLED2

103) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

104) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

105) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

106) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

107) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

108) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

109) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

110) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

Answer Key

Testname: UNTITLED2

111) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

112) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

113) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

114) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

115) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

116) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

117) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

118) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

Answer Key

Testname: UNTITLED2

119) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

120) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

121) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

122) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

123) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

124) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

125) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

Answer Key

Testname: UNTITLED2

126) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

127) A

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

128) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

129) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

130) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

131) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

132) B

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

Answer Key

Testname: UNTITLED2

133) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

134) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

135) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

136) D

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

137) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

138) D

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

139) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

140) B

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

Answer Key

Testname: UNTITLED2

141) D

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

142) B

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

143) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

144) B

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

145) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

146) D

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

147) C

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

148) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

Answer Key

Testname: UNTITLED2

149) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

150) B

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

151) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

152) D

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

153) D

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.15 **Construct** a simple diagram illustrating the pollution from photochemical reactions in motor vehicle exhaust

154) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.16 **Describe** the sources and effects of industrial smog.

155) E

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

156) D

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

Answer Key

Testname: UNTITLED2

157) B

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

158) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

159) B

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

160) D

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

161) B

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

162) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

163) B

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

164) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

Answer Key

Testname: UNTITLED2

165) B

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

166) D

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

167) C

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

168) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

169) D

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

170) C

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

171) A

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

172) D

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

Answer Key

Testname: UNTITLED2

173) A

Chapter/section: 2.6 The Human Denominator

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 14. How human actions modify the physical environment

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

174) TRUE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.1 **Distinguish** between galaxies, stars, and planets.

175) TRUE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.1 **Distinguish** between galaxies, stars, and planets.

176) TRUE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.1 **Distinguish** between galaxies, stars, and planets.

177) FALSE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.1 **Distinguish** between galaxies, stars, and planets.

178) TRUE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.1 **Distinguish** between galaxies, stars, and planets.

179) TRUE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.2 **Locate** Earth in the Solar System and Galaxy.

180) FALSE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.2 **Locate** Earth in the Solar System and Galaxy.

Answer Key

Testname: UNTITLED2

181) FALSE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.2 **Locate** Earth in the Solar System and Galaxy.

182) FALSE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.2 **Locate** Earth in the Solar System and Galaxy.

183) TRUE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.3 **Summarize** the origin, formation, and development of Earth.

184) TRUE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.3 **Summarize** the origin, formation, and development of Earth.

185) FALSE

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

186) TRUE

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.5 **Describe** the Sun's operation.

187) TRUE

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.5 **Describe** the Sun's operation.

188) TRUE

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.6 **Explain** the characteristics of the solar wind.

Answer Key

Testname: UNTITLED2

189) TRUE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.6 **Explain** the characteristics of the solar wind.

190) FALSE

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.6 **Explain** the characteristics of the solar wind.

191) FALSE

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

192) TRUE

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

193) FALSE

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.6 **Explain** the characteristics of the solar wind.

194) FALSE

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

195) FALSE

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 3. Read and interpret graphs and data.

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

196) TRUE

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

Answer Key

Testname: UNTITLED2

197) FALSE

Chapter/section: 2.2 Solar Energy: From Sun to Earth
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 3. Read and interpret graphs and data.
LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

198) TRUE

Chapter/section: 2.2 Solar Energy: From Sun to Earth
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

199) TRUE

Chapter/section: 2.3 The Seasons
Bloom's Taxonomy: 3/4 Application/Analysis
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

200) FALSE

Chapter/section: 2.3 The Seasons
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

201) TRUE

Chapter/section: 2.3 The Seasons
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength—Earth's seasonality.

202) FALSE

Chapter/section: 2.3 The Seasons
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.9 **Define** solar altitude, solar declination, and daylength.

203) FALSE

Chapter/section: 2.3 The Seasons
Bloom's Taxonomy: 3/4 Application/Analysis
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength—Earth's seasonality.

204) TRUE

Chapter/section: 2.3 The Seasons
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.9 **Define** solar altitude, solar declination, and daylength.

Answer Key

Testname: UNTITLED2

205) TRUE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

206) TRUE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.4 **Reconstruct** Earth's annual orbit about the Sun.

207) FALSE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

208) TRUE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

209) FALSE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

210) FALSE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

211) FALSE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

212) FALSE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 3/4 Application/Analysis

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

Answer Key

Testname: UNTITLED2

213) FALSE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

214) TRUE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

215) FALSE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

216) TRUE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

217) TRUE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

218) FALSE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

219) FALSE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

220) TRUE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

Answer Key

Testname: UNTITLED2

221) FALSE

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

222) FALSE

Chapter/section: 2.6 The Human Denominator

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 14. How human actions modify the physical environment

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

223) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis–composition, temperature, and function

224) FALSE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis–composition, temperature, and function

225) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis–composition, temperature, and function

226) FALSE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis–composition, temperature, and function

227) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis–composition, temperature, and function

Answer Key

Testname: UNTITLED2

228) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

229) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

230) FALSE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis—composition, temperature, and function

231) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

232) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

233) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

234) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

235) FALSE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

Answer Key

Testname: UNTITLED2

236) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO:

237) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

238) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

239) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

240) FALSE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

241) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.

242) FALSE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

243) TRUE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 1/2 Knowledge/Comprehension
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO:
LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

Answer Key

Testname: UNTITLED2

244) FALSE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

245) FALSE

Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO:

246) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

247) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

248) FALSE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

249) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

250) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

251) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

Answer Key

Testname: UNTITLED2

252) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

253) FALSE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

254) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

255) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

256) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

257) FALSE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

258) TRUE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

259) FALSE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

Answer Key

Testname: UNTITLED2

260) FALSE

Chapter/section: 2.5 Pollutants in the Atmosphere

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

261) TRUE

Chapter/section: 2.6 The Human Denominator

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 14. How human actions modify the physical environment

Global Sci. LO:

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength—Earth's seasonality.

262) FALSE

Chapter/section: 2.6 The Human Denominator

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 14. How human actions modify the physical environment

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

263) TRUE

Chapter/section: 2.6 The Human Denominator

Bloom's Taxonomy: 1/2 Knowledge/Comprehension

Geo Standard: 14. How human actions modify the physical environment

Global Sci. LO:

LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.

264) The size of the universe is vast; the light year is therefore a useful unit of measurement for distances of such galactic scale.

Chapter/section: 2.1 The Solar System, Sun, and Earth

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 8. Communicate effectively in writing.

LO:

265) Due to Earth's curved surface, lower latitudes receive more concentrated direct insolation, while higher latitudes receive less concentrated, more diffuse insolation. This latitudinal imbalance in energy drives global circulation in the atmosphere and oceans.

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 8. Communicate effectively in writing.

LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

266) The sun emits shortwave radiation primarily in the visible and infrared wavelengths, while Earth emits longwave radiation primarily in the thermal infrared wavelengths.

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 8. Communicate effectively in writing.

LO: 2.7 **Explain** the characteristics of the electromagnetic spectrum of radiant energy.

Answer Key

Testname: UNTITLED2

- 267) At lower latitudes, daily insolation is high throughout the year, with little variation month to month. At higher latitudes, insolation values are greatest in the summer months, lowest in the winter months, and vary greatly with latitude.

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 8. Communicate effectively in writing.

LO: 2.8 **Illustrate** the interception of solar energy and its uneven distribution at the top of the atmosphere.

- 268) thermopause: outer boundary of Earth's energy system, the region at the top of the atmosphere (approx. 480 km); insolation: incoming solar radiation; solar constant: average insolation received at the thermopause when Earth is at its average distance from the Sun (1372 W/m^2); Subsolar point: the only point where insolation arrives perpendicular to the surface.

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 8. Communicate effectively in writing.

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

- 269) Earth's revolution around the sun; Earth's rotation on its axis; Earth's axial tilt; axial parallelism; and Earth's sphericity.

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 8. Communicate effectively in writing.

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

- 270) The equinoxes mark the beginning of the spring and fall, all locations on Earth between the poles have equal daylengths; and it marks the sunrise/set at the poles. The solstices mark the beginning of the summer and winter, are when the subsolar point is at its maximum latitude; and when either the Arctic (June solstice) or Antarctic (December Solstice) Circles are completely within the circle of illumination.

Chapter/section: 2.2 Solar Energy: From Sun to Earth

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 8. Communicate effectively in writing.

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

- 271) The circle of illumination is the dividing line between day and night. Combined with the four factors that cause the seasons, the circle of illumination will influence daylength throughout the year.

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 8. Communicate effectively in writing.

LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.

- 272) Answers will vary depending on where students live.

Chapter/section: 2.3 The Seasons

Bloom's Taxonomy: 5/6 Synthesis/Evaluation

Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.

Global Sci. LO: 8. Communicate effectively in writing.

LO: 2.9 **Define** solar altitude, solar declination, and daylength.

Answer Key

Testname: UNTITLED2

- 273) Because the equatorial region receives fairly constant high insolation and has consistent daylength throughout the year, there are little seasonal variations; insolation varies throughout the year (as does daylength), there are greater season variations.
Chapter/section: 2.3 The Seasons
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.
- 274) Answers will vary. Figure GIA 2.1 is a good basis for the answer.
Chapter/section: 2.3 The Seasons
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength–Earth's seasonality.
- 275) composition: homosphere and heterosphere; temperature: thermosphere, mesosphere, stratosphere, and troposphere; and function: ionosphere and ozonosphere. Students should provide relevant information about each.
Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis–composition, temperature, and function
- 276) It follows a zig-zag patten: decreases in troposphere, increases in stratosphere, decreases again in mesosphere, and increases in thermosphere.
Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.11 **Draw** a diagram showing atmospheric structure based on three criteria for analysis–composition, temperature, and function
- 277) nitrogen, oxygen, argon, and carbon dioxide. Argon is least important to life (it is inert).
Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.12 **List** and **describe** the components of the modern atmosphere, giving their relative percentage contributions by volume.
- 278) In a nutshell, stratospheric ozone protects Earth from harmful UV radiation. Through a complex set of chemical reactions, CFCs and other ozone–destroying chemicals destroy ozone. International efforts, such as the Montreal Protocol, have sought to ban these chemicals. In the troposphere, though, ozone is a principal component of photochemical smog.
Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.

Answer Key

Testname: UNTITLED2

- 279) In a nutshell, stratospheric ozone protects Earth from harmful UV radiation. Through a complex set of chemical reactions, CFCs and other ozone-destroying chemicals destroy ozone.
Chapter/section: 2.4 Atmospheric Composition, Temperature, and Function
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.13 **Describe** conditions within the stratosphere; specifically, **review** the function and status of the ozonosphere, or ozone layer.
- 280) Natural: volcanoes, forest fires, plants, soil, and oceans. Anthropogenic: carbon monoxide, nitrogen oxides, VOCs, ozone, PANs, sulfur oxides, PM, carbon dioxide, etc.
Chapter/section: 2.5 Pollutants in the Atmosphere
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.
- 281) Significant reductions in atmospheric pollution, direct economic benefits, has saved lives, etc.
Chapter/section: 2.5 Pollutants in the Atmosphere
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 07. The physical processes that shape the patterns of Earth's surface.
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.
- 282) There are several examples given in the book, but students can select others, as well. Seasonal shift in the subtropical high pressure zone in Africa are leading to decreased rainfall; in the United States, the trend has been towards a longer growing season; and in Alaska, longer summers have changed migration patterns of moose.
Chapter/section: 2.6 The Human Denominator
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 14. How human actions modify the physical environment
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.10 **Describe** the annual variability of solar altitude, solar declination, and daylength-Earth's seasonality.
- 283) Troposphere: various types of pollution; Stratosphere: ozone depletion.
Chapter/section: 2.6 The Human Denominator
Bloom's Taxonomy: 5/6 Synthesis/Evaluation
Geo Standard: 14. How human actions modify the physical environment
Global Sci. LO: 8. Communicate effectively in writing.
LO: 2.14 **Distinguish** between natural and anthropogenic pollutants in the lower atmosphere.