

Earth Science Ch. 7 Practice Test

Multiple Choice

Identify the choice that best completes the statement or answers the question.

_____ 1.	The atmosphere is	
a.		the layer in which weather occurs.
b.		the layer that contains the ozone layer.
c.		the layer of water in the oceans.
d.		the layer of gases that surrounds Earth.
_____ 2.	What percent of our atmosphere is made up of gases other than oxygen and nitrogen?	
a.		5%
b.		1%
c.		10%
d.		2%
_____ 3.	Ozone is	
a.		a form of oxygen with three oxygen atoms in each molecule.
b.		a form of nitrogen with three nitrogen atoms in each molecule.
c.		a form of oxygen with two oxygen atoms in each molecule.
d.		a form of nitrogen with two nitrogen atoms in each molecule.
_____ 4.	Earth's atmosphere is important to living things because it	
a.		contains dust and other particles.
b.		is very thin compared to the size of Earth.
c.		provides all the gases that living things need to survive.
d.		maintains a constant relative humidity.
_____ 5.	Earth's atmosphere traps energy from the sun, which	
a.		allows water to exist as a liquid.
b.		allows solar radiation to penetrate to the surface.
c.		allows ozone to form easily.
d.		causes meteors to burn up.
_____ 6.	Photochemical smog results from the interaction of pollutants in the presence of	
a.		water vapor.
b.		oxygen.
c.		sunlight.
d.		rainfall.
_____ 7.	Density can be determined using the formula	
a.		density = mass/volume.
b.		density = volume/mass.
c.		density = mass • volume.
d.		density = mass + volume.
_____ 8.	The less mass in a given volume of air, the	
a.		more the air weighs.
b.		greater the air pressure.
c.		more dense the air.
d.		less dense the air.
_____ 9.	The air pressure acting on the roof of your house	
a.		comes from the air within a few feet of your rooftop.
b.		is much greater on top of the roof than below it.
c.		comes from all the air above your roof.
d.		is much greater underneath your roof than on top of it.
_____ 10.	Instruments used to measure air pressure are called	
a.		thermometers.

b.	hygrometers.
c.	hydrometers.
d.	barometers.
11.	An aneroid barometer is different from a mercury barometer in that it
a.	measures temperature.
b.	uses alcohol instead of mercury.
c.	does not contain a liquid.
d.	provides readings that increase as air pressure increases.
12.	As you rise upwards in the atmosphere, air pressure
a.	increases.
b.	decreases.
c.	doesn't change.
d.	first increases, then decreases.
13.	When climbing a high mountain, you get out of breath easily because
a.	the percentage of oxygen in the air decreases.
b.	the air is more dense.
c.	there is less oxygen in each cubic meter of air.
d.	air pressure is greater.
14.	The layer of our atmosphere in which weather occurs is the
a.	troposphere.
b.	stratosphere.
c.	mesosphere.
d.	exosphere.
15.	The ozone layer protects living things on Earth from
a.	visible light.
b.	infrared rays.
c.	ultraviolet radiation.
d.	carbon dioxide.
16.	Which layer of the atmosphere protects Earth's surface from being hit by most meteoroids?
a.	troposphere
b.	stratosphere
c.	mesosphere
d.	thermosphere
17.	Wavelengths that are a little bit shorter than visible light are
a.	infrared.
b.	red.
c.	violet.
d.	ultraviolet.
18.	Most of Earth's incoming ultraviolet radiation is absorbed by
a.	clouds.
b.	dust.
c.	ozone.
d.	water vapor.
19.	Most of the energy that heats Earth's atmosphere is
a.	visible light.
b.	ultraviolet light.
c.	blue light.
d.	infrared radiation.
20.	The total energy of motion in the particles of a substance is called
a.	radiation.
b.	absorbed energy.
c.	thermal energy.
d.	temperature.

21.	The freezing point of pure water on the Celsius scale is	
a.		0°C.
b.		32°C.
c.		100°C.
d.		212°C.
22.	Heat transfer between two substances that are in contact is called	
a.		conduction.
b.		thermal energy.
c.		convection.
d.		radiation.
23.	Heat from the sun reaches you by	
a.		conduction.
b.		light emission.
c.		convection.
d.		radiation.
24.	Convection takes place because	
a.		warm air is more dense than humid air.
b.		warm and cold air have the same density.
c.		cold air is less dense than warm air.
d.		cold air is more dense than warm air.
25.	Winds are caused by differences in	
a.		precipitation.
b.		humidity.
c.		air pressure.
d.		turbulence.
26.	Cool air tends to	
a.		be less dense and flow over warm air.
b.		be lifted up by more dense warm air.
c.		be more dense and flow under warm air.
d.		mix easily with warm air masses.
27.	Wind speed is measured by a(n)	
a.		barometer.
b.		anemometer.
c.		thermometer.
d.		hygrometer.
28.	Global winds generally	
a.		are not influenced by heating of Earth's surface.
b.		are unpredictable.
c.		change directions from day to day.
d.		blow from specific directions over long distances.
29.	Earth's rotation makes global winds curve. This is called the	
a.		convection effect.
b.		global effect.
c.		Coriolis effect.
d.		rotational effect.
30.	The doldrums are characterized by	
a.		high pressure.
b.		cool temperatures.
c.		weak winds.
d.		falling air.

Modified True/False

Indicate whether the statement is true or false. If false, change the identified word or phrase to

make the statement true.

- ____ 31. Dry air is 78% nitrogen and 21% carbon dioxide. _____
- ____ 32. Nitrogen oxides react with other air pollutants in the presence of sunlight to form acid rain. _____
- ____ 33. The density of a fixed volume of air increases as its mass increases. _____
- ____ 34. As air pressure increases, the column of mercury in a barometer rises. _____
- ____ 35. As altitude increases, the density of the air increases. _____
- ____ 36. People live in the thermosphere, or inner layer of the atmosphere. _____
- ____ 37. When heated, Earth's surface radiates some of the energy back into the atmosphere as infrared radiation. _____
- ____ 38. When you touch a hot spoon, heat is transferred by conduction from the spoon to your hand. _____
- ____ 39. Fluids like air tend to move toward areas of high pressure. _____
- ____ 40. Earth's major wind belts are the trade winds, the prevailing westerlies, and the polar latitudes. _____

Completion

Complete each statement.

- ____ 41. The condition of Earth's atmosphere at a particular time and place is known as _____. _____
- ____ 42. The atmospheric gas called _____ forms clouds when it condenses.
- ____ 43. Acid rain can form when _____ in the air mixes with sulfur oxides to form sulfuric acid.
- ____ 44. Because air has mass, it exerts a force per unit area called _____.
- ____ 45. A(n) _____ barometer measures air pressure by using a metal chamber that is sensitive to pressure changes.
- ____ 46. The _____, or elevation, of a mountaintop is its distance above sea level.
- ____ 47. On a mountaintop, a person becomes out of breath quickly because fewer _____ molecules are present per cubic meter of air.
- ____ 48. Scientists divide Earth's atmosphere into four main layers, classified according to changes in _____.
- ____ 49. The _____ extends from the top of the troposphere to the bottom of the mesosphere.
- ____ 50. In the part of the atmosphere called the _____, energy from the sun strikes gas molecules and causes them to glow.
- ____ 51. Energy travels through space to Earth in the form of _____ waves.
- ____ 52. Energy from the sun that reaches Earth is mostly in the form of visible light, infrared radiation, and _____ radiation.

53. Solar energy called _____ radiation is felt as heat and has wavelengths longer than that of red light.
54. In the atmosphere, some of the sun's rays get _____, or reflected in all directions.
55. Gases in the air hold much of the energy that is radiated from Earth's surface in a process called the _____.
56. An instrument called a(n) _____ is used to measure how hot or cold the air is.
57. Most of the heating of the troposphere occurs by _____, which is the transfer of heat by fluid movement.
58. The increased cooling that a wind can cause is called the _____.
59. Uneven heating of the atmosphere leads to differences in _____, which causes wind.
60. Winds in the mid-latitudes that blow from west to east are called _____.

Short Answer

Use the diagram to answer each question.

61. What are the names of the six layers of the atmosphere shown?
62. Give the number and name of the layer in which Earth's weather occurs.
63. Give the number and name of the layer that contains the ozone layer.
64. Within layer 2, what happens to the temperature as you go higher?
65. About how many times thicker is the mesosphere than the troposphere?
66. Give the number and name of the deepest layer of the atmosphere.

Use the diagram to answer each question.

67. In diagram Y, which warms up more slowly, the land or the water?
68. In diagram X, which way does the wind blow? Why?
69. In diagram Y, which way does the wind blow? Why?
70. Which diagram shows the formation of a sea breeze?
71. Which diagram shows the formation of a land breeze?
72. Why are the winds depicted in the diagrams considered local winds and not global winds?

Essay

73. Briefly describe how oxygen is used by living things and in other important processes.
74. Describe three ways that the atmosphere helps living things survive on Earth.
75. Explain how nitrogen oxides can form acid rain and how they can form photochemical smog.

76. You plan to hike to the top of Mount Shasta, where you will measure the air pressure. Which type of barometer will be more practical to take? Explain your answer.
77. Describe the characteristics of the mesosphere and its role in protecting Earth from meteoroids.
78. Explain why the daytime sky appears blue and sunsets often appear red.
79. Contrast the three ways in which heat is transferred.
80. Explain why the region near the equator has little or no wind.

Earth Science Ch. 7 Practice Test

Answer Section

MULTIPLE CHOICE

1. ANS: D PTS: 1 DIF: L1
OBJ: CaES.7.1.1 Describe the composition of Earth's atmosphere.
STA: S 6.4.e BLM: knowledge
2. ANS: B PTS: 1 DIF: L2
OBJ: CaES.7.1.1 Describe the composition of Earth's atmosphere.
STA: S 6.4.e BLM: analysis
3. ANS: A PTS: 1 DIF: L1
OBJ: CaES.7.1.1 Describe the composition of Earth's atmosphere.
STA: S 6.4.e BLM: knowledge
4. ANS: C PTS: 1 DIF: L2
OBJ: CaES.7.1.2 State how the atmosphere is important to living things.
STA: S 6.6.b BLM: comprehension
5. ANS: A PTS: 1 DIF: L1
OBJ: CaES.7.1.2 State how the atmosphere is important to living things.
STA: S 6.4.e BLM: knowledge
6. ANS: C PTS: 1 DIF: L2
OBJ: CaES.7.1.3 Identify what causes smog and acid rain. STA: S 6.4.e
BLM: comprehension
7. ANS: A PTS: 1 DIF: L1
OBJ: CaES.7.2.1 Identify some properties of air. STA: S 6.4.e
BLM: knowledge
8. ANS: D PTS: 1 DIF: L2
OBJ: CaES.7.2.1 Identify some properties of air. STA: S 6.4.e
BLM: application
9. ANS: C PTS: 1 DIF: L2
OBJ: CaES.7.2.1 Identify some properties of air. STA: S 6.4.e
BLM: application
10. ANS: D PTS: 1 DIF: L1
OBJ: CaES.7.2.2 Name instruments that are used to measure air pressure.
STA: S 6.4.e BLM: knowledge
11. ANS: C PTS: 1 DIF: L2
OBJ: CaES.7.2.2 Name instruments that are used to measure air pressure.
STA: S 6.4.e BLM: analysis
12. ANS: B PTS: 1 DIF: L2
OBJ: CaES.7.2.3 Explain how altitude affects air pressure and density.
STA: S 6.4.e BLM: comprehension
13. ANS: C PTS: 1 DIF: L2
OBJ: CaES.7.2.3 Explain how altitude affects air pressure and density.
STA: S 6.4.e BLM: application
14. ANS: A PTS: 1 DIF: L1

OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e
 BLM: knowledge
 15. ANS: C PTS: 1 DIF: L1
 OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e
 BLM: knowledge
 16. ANS: C PTS: 1 DIF: L1
 OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e
 BLM: knowledge
 17. ANS: D PTS: 1 DIF: L2
 OBJ: CaES.7.4.1 State in what form energy travels from the sun to Earth.
 STA: S 6.3.d BLM: analysis
 18. ANS: C PTS: 1 DIF: L1
 OBJ: CaES.7.4.1 State in what form energy travels from the sun to Earth.
 STA: S 6.4.b BLM: knowledge
 19. ANS: D PTS: 1 DIF: L2
 OBJ: CaES.7.4.2 Explain what happens to the sun's energy in the atmosphere and at Earth's surface.
 STA: S 6.4.b BLM: comprehension
 20. ANS: C PTS: 1 DIF: L1
 OBJ: CaES.7.5.1 Describe how temperature is measured. STA: S 6.3.c
 BLM: knowledge
 21. ANS: A PTS: 1 DIF: L1
 OBJ: CaES.7.5.1 Describe how temperature is measured. STA: S 6.3.c
 BLM: knowledge
 22. ANS: A PTS: 1 DIF: L1
 OBJ: CaES.7.5.2 Identify three ways in which heat is transferred.
 STA: S 6.3.c BLM: knowledge
 23. ANS: D PTS: 1 DIF: L2
 OBJ: CaES.7.5.2 Identify three ways in which heat is transferred.
 STA: S 6.4.d BLM: comprehension
 24. ANS: D PTS: 1 DIF: L2
 OBJ: CaES.7.5.3 Explain how heat is transferred in the troposphere.
 STA: S 6.3.c BLM: application
 25. ANS: C PTS: 1 DIF: L1
 OBJ: CaES.7.6.1 State how scientists describe and explain winds.
 STA: S 6.4.e BLM: knowledge
 26. ANS: C PTS: 1 DIF: L2
 OBJ: CaES.7.6.1 State how scientists describe and explain winds.
 STA: S 6.4.e BLM: comprehension
 27. ANS: B PTS: 1 DIF: L1
 OBJ: CaES.7.6.1 State how scientists describe and explain winds.
 STA: S 6.4.e BLM: knowledge
 28. ANS: D PTS: 1 DIF: L1
 OBJ: CaES.7.6.2 Distinguish between local winds and global winds.
 STA: S 6.4.e BLM: knowledge
 29. ANS: C PTS: 1 DIF: L1
 OBJ: CaES.7.6.2 Distinguish between local winds and global winds.
 STA: S 6.4.e BLM: knowledge
 30. ANS: C PTS: 1 DIF: L2
 OBJ: CaES.7.6.3 Identify where the major global wind belts are located.
 STA: S 6.4.e BLM: comprehension

MODIFIED TRUE/FALSE

31. ANS: F, oxygen
 PTS: 1 DIF: L2
 OBJ: CaES.7.1.1 Describe the composition of Earth's atmosphere.

STA: S 6.6.b BLM: comprehension
 32. ANS: F, photochemical smog

PTS: 1 DIF: L2
 OBJ: CaES.7.1.3 Identify what causes smog and acid rain. STA: S 6.4.e
 BLM: application
 33. ANS: T PTS: 1 DIF: L2
 OBJ: CaES.7.2.1 Identify some properties of air. STA: S 6.4.e
 BLM: analysis
 34. ANS: T PTS: 1 DIF: L2
 OBJ: CaES.7.2.2 Name instruments that are used to measure air pressure.
 STA: S 6.4.e BLM: application
 35. ANS: F, decreases

PTS: 1 DIF: L2
 OBJ: CaES.7.2.3 Explain how altitude affects air pressure and density.
 STA: S 6.4.e BLM: comprehension
 36. ANS: F, troposphere

PTS: 1 DIF: L1
 OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e
 BLM: knowledge
 37. ANS: T PTS: 1 DIF: L1
 OBJ: CaES.7.4.2 Explain what happens to the sun's energy in the atmosphere and at Earth's surface. STA: S 6.4.b BLM: knowledge
 38. ANS: T PTS: 1 DIF: L2
 OBJ: CaES.7.5.2 Identify three ways in which heat is transferred.
 STA: S 6.3.d BLM: application
 39. ANS: F, low

PTS: 1 DIF: L2
 OBJ: CaES.7.6.1 State how scientists describe and explain winds.
 STA: S 6.4.e BLM: application
 40. ANS: F, easterlies

PTS: 1 DIF: L2
 OBJ: CaES.7.6.3 Identify where the major global wind belts are located.
 STA: S 6.4.e BLM: knowledge

COMPLETION

41. ANS: weather

PTS: 1 DIF: L1
 OBJ: CaES.7.1.1 Describe the composition of Earth's atmosphere.
 STA: S 6.4.e BLM: knowledge
 42. ANS: water vapor

PTS: 1 DIF: L2
 OBJ: CaES.7.1.1 Describe the composition of Earth's atmosphere.
 STA: S 6.6.b BLM: comprehension
 43. ANS: water

PTS: 1 DIF: L2
 OBJ: CaES.7.1.3 Identify what causes smog and acid rain. STA: S 6.4.e
 BLM: knowledge
 44. ANS: air pressure

PTS: 1 DIF: L2 OBJ: CaES.7.2.1 Identify some properties of air.
STA: S 6.4.e BLM: comprehension
45. ANS: aneroid

PTS: 1 DIF: L2
OBJ: CaES.7.2.2 Name instruments that are used to measure air pressure.
STA: S 6.4.e BLM: comprehension
46. ANS: altitude

PTS: 1 DIF: L1
OBJ: CaES.7.2.3 Explain how altitude affects air pressure and density.
STA: S 6.4.e BLM: knowledge
47. ANS: oxygen

PTS: 1 DIF: L2
OBJ: CaES.7.2.3 Explain how altitude affects air pressure and density.
STA: S 6.4.e BLM: application
48. ANS: temperature

PTS: 1 DIF: L1
OBJ: CaES.7.3.1 Identify the four main layers of the atmosphere.
STA: S 6.4.e BLM: knowledge
49. ANS: stratosphere

PTS: 1 DIF: L2
OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e
BLM: comprehension
50. ANS: ionosphere

PTS: 1 DIF: L2
OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e
BLM: comprehension
51. ANS: electromagnetic

PTS: 1 DIF: L2
OBJ: CaES.7.4.1 State in what form energy travels from the sun to Earth.
STA: S 6.4.b BLM: comprehension
52. ANS: ultraviolet

PTS: 1 DIF: L2
OBJ: CaES.7.4.1 State in what form energy travels from the sun to Earth.
STA: S 6.4.b BLM: comprehension
53. ANS: infrared

PTS: 1 DIF: L2
OBJ: CaES.7.4.1 State in what form energy travels from the sun to Earth.
STA: S 6.4.b BLM: comprehension
54. ANS: scattered

PTS: 1 DIF: L2
OBJ: CaES.7.4.1 State in what form energy travels from the sun to Earth.
STA: S 6.4.b BLM: comprehension
55. ANS: greenhouse effect

PTS: 1 DIF: L2
OBJ: CaES.7.4.2 Explain what happens to the sun's energy in the atmosphere and at Earth's surface.
STA: S 6.4.d BLM: comprehension

56. ANS: thermometer

PTS: 1 DIF: L1

OBJ: CaES.7.5.1 Describe how temperature is measured. STA: S 6.3.c

BLM: knowledge

57. ANS: convection

PTS: 1 DIF: L2

OBJ: CaES.7.5.3 Explain how heat is transferred in the troposphere.

STA: S 6.4.d BLM: application

58. ANS:

wind-chill factor

wind chill factor

PTS: 1 DIF: L1

OBJ: CaES.7.6.1 State how scientists describe and explain winds.

STA: S 6.4.e BLM: knowledge

59. ANS: air pressure

PTS: 1 DIF: L2

OBJ: CaES.7.6.1 State how scientists describe and explain winds.

STA: S 6.4.e BLM: comprehension

60. ANS: prevailing westerlies

PTS: 1 DIF: L2

OBJ: CaES.7.6.3 Identify where the major global wind belts are located.

STA: S 6.4.e BLM: comprehension

SHORT ANSWER

61. ANS:

1, troposphere; 2, stratosphere; 3, mesosphere; 4, ionosphere; 5, exosphere; 6, thermosphere

PTS: 1 DIF: L2

OBJ: CaES.7.3.1 Identify the four main layers of the atmosphere.

STA: S 6.4.e BLM: comprehension

62. ANS:

1, troposphere

PTS: 1 DIF: L2

OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e

BLM: analysis

63. ANS:

2, stratosphere

PTS: 1 DIF: L2

OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e

BLM: analysis

64. ANS:

It increases.

PTS: 1 DIF: L3

OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e

BLM: synthesis

65. ANS:

2.5 (30/12)

PTS: 1 DIF: L2
OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e
BLM: analysis
66. ANS:
6, thermosphere

PTS: 1 DIF: L2
OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e
BLM: analysis
67. ANS:
the water

PTS: 1 DIF: L2
OBJ: CaES.7.6.2 Distinguish between local winds and global winds.
STA: S 6.4.e BLM: analysis
68. ANS:
Air flows from the land to the water in a land breeze. At night, the land cools more quickly than the water, so the air over the land becomes cooler than the air over the water. As the warmer air over the water rises, cooler air moves in from the land to take its place.

PTS: 1 DIF: L3
OBJ: CaES.7.6.2 Distinguish between local winds and global winds.
STA: S 6.4.e BLM: synthesis
69. ANS:
Air flows from the water to the land in a sea breeze. During the day, the sun warms the land faster than it warms the water, so the air over the land becomes warmer than the air over the water. As the warmer air over the land rises, cooler air moves in from the water to take its place.

PTS: 1 DIF: L3
OBJ: CaES.7.6.2 Distinguish between local winds and global winds.
STA: S 6.4.e BLM: synthesis
70. ANS:
Diagram Y

PTS: 1 DIF: L3
OBJ: CaES.7.6.2 Distinguish between local winds and global winds.
STA: S 6.4.e BLM: synthesis
71. ANS:
Diagram X

PTS: 1 DIF: L3
OBJ: CaES.7.6.2 Distinguish between local winds and global winds.
STA: S 6.4.e BLM: synthesis
72. ANS:
Local winds are created by the unequal heating of Earth's surface in small areas, such as the stretch of coast shown above. Global winds are also created by the unequal heating of Earth's surface, but they occur over a large area.

PTS: 1 DIF: L2
OBJ: CaES.7.6.2 Distinguish between local winds and global winds.
STA: S 6.4.e BLM: analysis

ESSAY

73. ANS:
Plants and animals use oxygen from the atmosphere to release energy from their food. Oxygen is required for burning to occur. Oxygen also causes certain objects to rust. Finally, the three-atom

form of oxygen, ozone, absorbs dangerous ultraviolet energy from the sun and so helps to protect living things on Earth.

PTS: 1 DIF: L2
OBJ: CaES.7.1.1 Describe the composition of Earth's atmosphere.
STA: S 6.6.b BLM: comprehension
74. ANS:

Answers will vary. Possible answers include: It protects living things from dangerous radiation from the sun; it provides gases that plants and animals need to live; it traps energy from the sun to keep Earth's surface warm enough for living things to survive and to keep some water in liquid form; it prevents Earth's surface from being hit by most meteoroids.

PTS: 1 DIF: L2
OBJ: CaES.7.1.2 State how the atmosphere is important to living things.
STA: S 6.6.b BLM: synthesis
75. ANS:

Nitrogen oxides can combine with water in the air to form nitric acid, a major component of acid rain. Nitrogen oxides can combine with hydrocarbons and other air pollutants in the presence of sunlight to form photochemical smog.

PTS: 1 DIF: L3
OBJ: CaES.7.1.3 Identify what causes smog and acid rain. STA: S 6.4.e
BLM: synthesis
76. ANS:

An aneroid barometer would be more practical. Because an aneroid barometer does not have an open container of liquid mercury, it is more portable for a hiking trip.

PTS: 1 DIF: L3
OBJ: CaES.7.2.2 Name instruments that are used to measure air pressure.
STA: S 6.4.e BLM: evaluation
77. ANS:

The mesosphere is the third-lowest, or middle, layer of the atmosphere (50 to 80 km). Its outer part is very cold, approaching -90°C . Meteoroids burn up in the mesosphere, so this layer protects Earth's surface from being hit by most meteoroids.

PTS: 1 DIF: L2
OBJ: CaES.7.3.2 Describe the characteristics of each layer. STA: S 6.4.e
BLM: comprehension
78. ANS:

Dust particles and gases in the atmosphere reflect light in all directions in a process called scattering. When you look at the sky, the light you see has been scattered by gas molecules in the atmosphere. Gas molecules scatter short wavelengths of visible light (blue or violet) more than long wavelengths (red and orange). Scattered light therefore looks bluer than ordinary sunlight, which is why the daytime sky looks blue. But when the sun is rising or setting, its light passes through a greater thickness of the atmosphere than when the sun is higher in the sky. More light from the blue end of the spectrum is removed by scattering before it reaches your eyes. The remaining light contains mostly red and orange light. The sun looks red, and clouds around it become very colorful.

PTS: 1 DIF: L3
OBJ: CaES.7.4.2 Explain what happens to the sun's energy in the atmosphere and at Earth's surface. STA: S 6.4.b BLM: synthesis
79. ANS:

Radiation is the direct transfer of energy by electromagnetic waves. Conduction is the direct transfer of heat between substances that are touching. Convection is the transfer of heat by the movement of a fluid.

PTS: 1 DIF: L2
OBJ: CaES.7.5.2 Identify three ways in which heat is transferred.

STA: S 6.3.c BLM: analysis
80. ANS:

Near the equator, the sun is strong and constantly heats the air. The warm air expands, rises steadily, and creates an area of low pressure. Cool air moves into the area, but it is warmed rapidly and rises before it moves very far. Little or no wind occurs because the air does not move horizontally.

PTS: 1 DIF: L2

OBJ: CaES.7.6.3 Identify where the major global wind belts are located.

STA: S 6.4.e BLM: comprehension