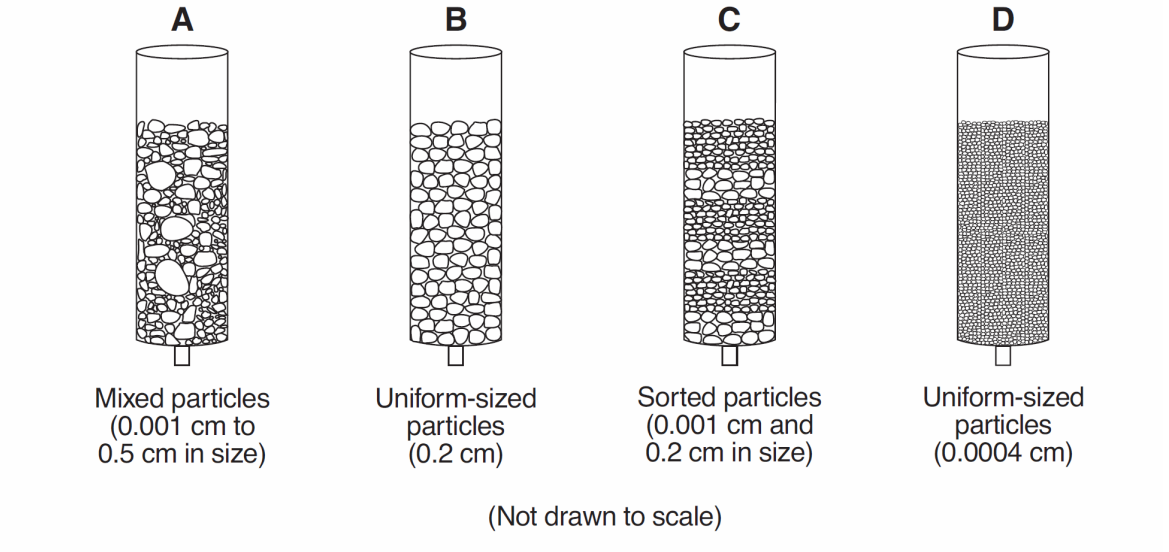
Practice Test

1. Base your answer to the following question on The diagram below shows columns *A*, *B*, *C*, and *D* that contain different sediments.



Equal volumes of water were poured through each column. Which column of sediment retained the most water?

1) *A* 2) *B* 3) *C* 4) D

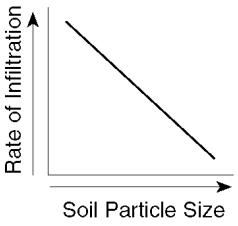
2. Which sediment size would allow water to flow through at the fastest rate?

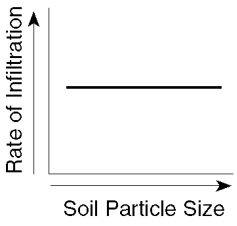
1) clay 2) silt 3) sand 4) pebbles

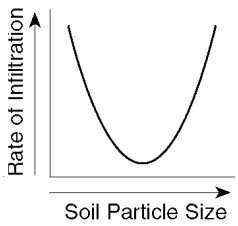
3. Which set of surface soil conditions on a hillside would result in the most infiltration of rainfall?

1) gentle slope, saturated soil, no vegetation
2) gentle slope, unsaturated soil, vegetation
3) steep slope, saturated soil, vegetation
4) steep slope, unsaturated soil, no vegetation

4. Which graph best represents the relationship between soil particle size and the rate at which water infiltrates permeable soil?

1)


3)


2)


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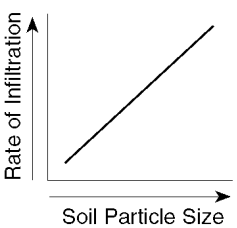


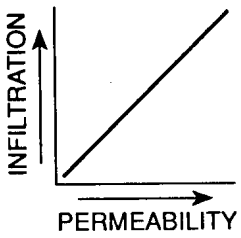
5. In general, the probability of flooding decreases when there is an increase in the amount of

1) precipitation 3) runoff
2) infiltration 4) snow melt

6. Which color of the visible spectrum has the *shortest* wavelength?

1) violet 2) blue 3) yellow 4) red

7. Which graph best represents the relationship between soil permeability rate and infiltration when all other conditions are the same?

1)


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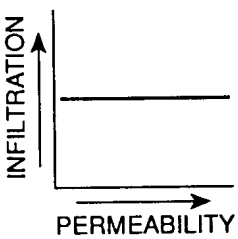

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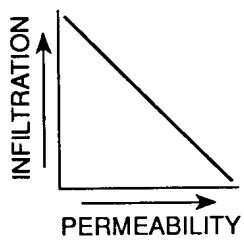
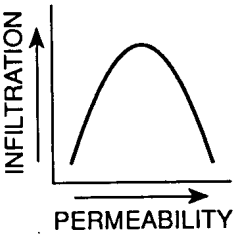
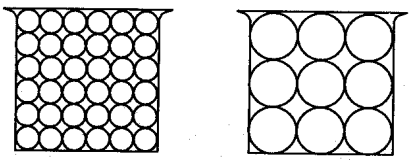


4)


8. The diagrams below represent two containers, each filled with a sample of nonporous particles of uniform size.



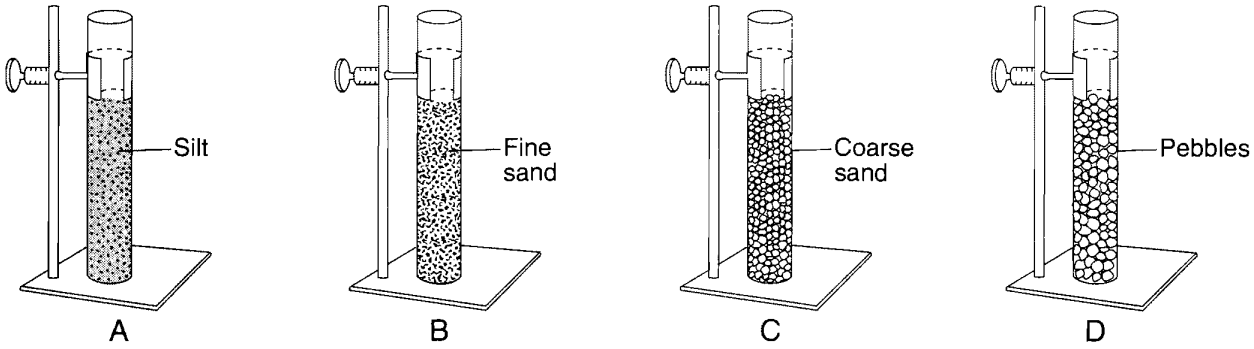
Compared to the sample of larger particles, the sample of smaller particles has

1) lower permeability 3) less porosity
2) higher permeability 4) more porosity

9. Sediments found in glacial moraines are best described as

1) sorted and layered 3) unsorted and layered
2) sorted and not layered 4) unsorted and not layered

10. Base your answer to the following question on the diagram below, which shows four tubes containing 500 milliliters of sediment labeled *A, B, C, and D. Each tube contains well-sorted, loosely packed particles of uniform shape and size and is open at the top. The classification of the sediment in each tube is labeled.*



(Not drawn to scale)

Water was poured into each tube of sediment and the time it took for the water to infiltrate to the bottom was recorded, in seconds. Which data table best represents the recorded results?

1)

Tubes	Infiltration Time (s)
A	5.2
B	3.4
C	2.8
D	2.3

2)

Tubes	Infiltration Time (s)
A	3.2
B	3.3
C	3.2
D	3.3

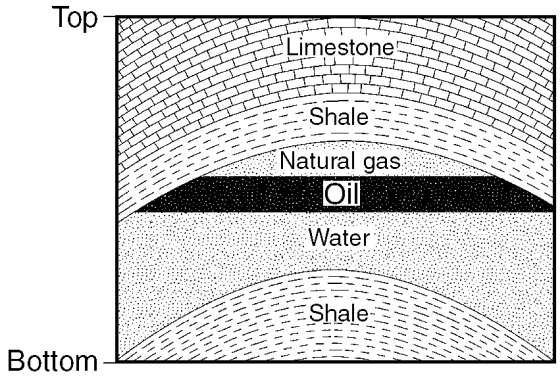
3)

Tubes	Infiltration Time (s)
A	2.4
B	2.9
C	3.6
D	3.8

4)

Tubes	Infiltration Time (s)
A	3.0
B	5.8
C	6.1
D	2.8

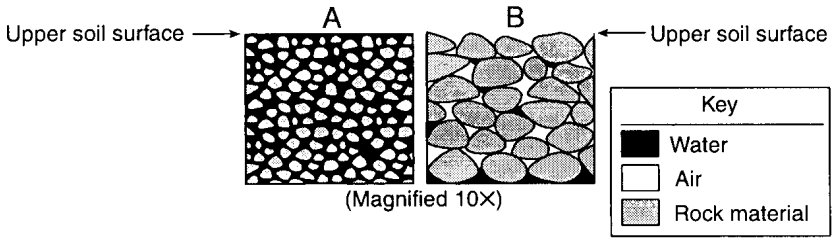
11. Base your answer to the following question on the bedrock cross section below, which represents part of Earth's crust where natural gas, oil, and water have moved upward through a layer of folded sandstone and filled the pore spaces at the top of the sandstone layer.



The natural gas, oil, and water are trapped within the top of the sandstone and do not move upward through the shale because, compared to the sandstone, the shale has

1) lower permeability 2) less foliation 3) larger pore spaces 4) larger particles

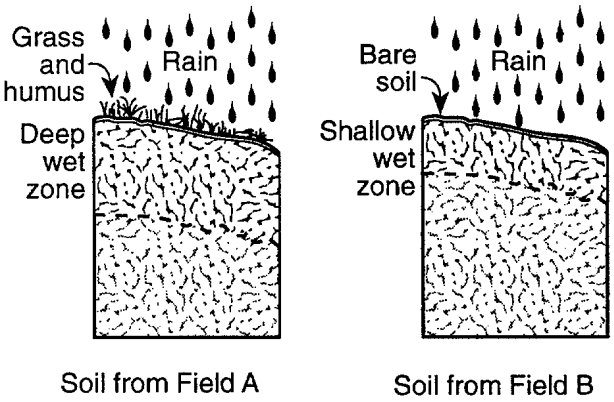
12. During a heavy rainstorm, soil samples *A* and *B* both became saturated with water. However, 10 minutes after the storm ended, the soils appeared as shown below.



Which statement best explains the observed change in the water content of the soil samples?

1) The permeability of *B* is greater than the permeability of *A*.
2) The porosity of *B* is greater than the porosity of *A*.
3) The capillarity of *B* is greater than the capillarity of *A*.
4) The surface runoff at *B* is greater than the surface runoff at *A*.

Base your answers to questions **13** and **14** on the diagrams below, which show two soil cross sections from adjacent fields in Nebraska. Both soils are the same except that human activities have removed the vegetation from the surface of field *B*. Each field has been receiving rain for several hours.



13. Which change would most likely result from replanting vegetation in field *B*?

1) Transpiration would decrease.
2) Runoff would increase.
3) Erosion would increase.
4) Water infiltration would increase.

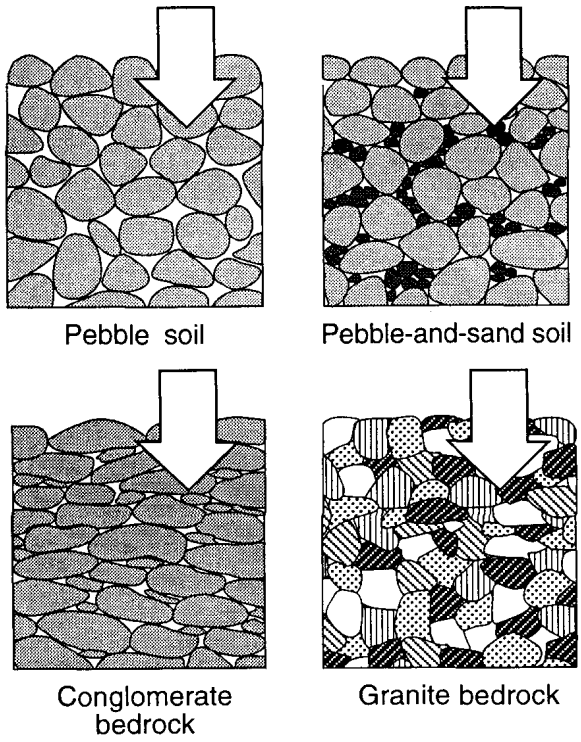
14. The soils in field *B* would have a higher rate of permeability if the soils

1) had lower porosity
2) had a steeper surface slope
3) were composed of larger rock particles
4) were compacted by machinery traveling over the field

15. Why are Precambrian gneiss cobbles and boulders commonly found on top of the surface bedrock in the Catskills?

1) The surface bedrock of the Catskills is composed of Precambrian gneiss.
2) The surface bedrock of the Catskills has been overturned.
3) Many meteorites composed of gneiss have landed in the Catskills.
4) Glaciers transported these rocks from the Adirondacks to the Catskills.

Base your answers to questions **16** and **17** on the diagram below, which represents samples of soil and bedrock at Earth's surface. The arrows represent possible infiltration of rainwater.



16. The least amount of rainwater will infiltrate the surface of the

1) pebble soil
2) pebble-and-sand soil
3) conglomerate bedrock
4) granite bedrock

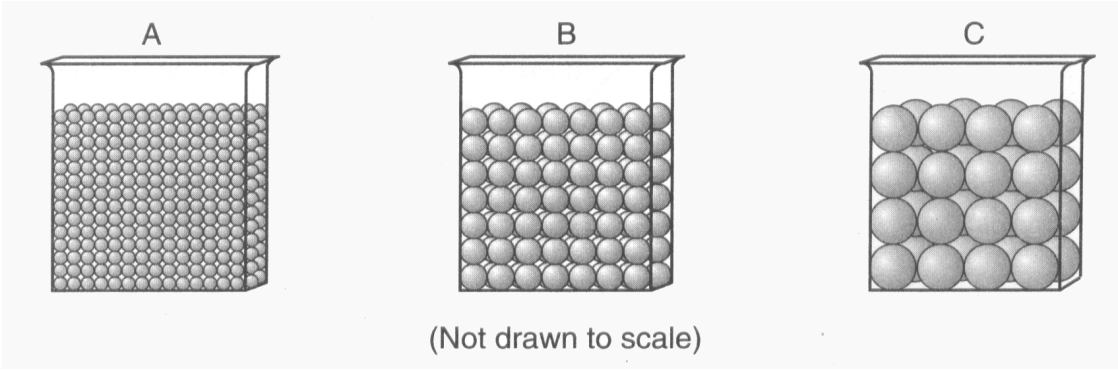
17. The pebble-and-sand soil has greater capillarity than the pebble soil because the pebble and sand soil

1) is weathering more rapidly
2) is more loosely packed
3) has smaller pore spaces
4) has less surface area

18. What is the best evidence that a glacial erratic has been transported?

1) It is located at a high elevation in a mountainous area.
2) It is less than 25 centimeters in diameter.
3) Its composition is different from that of the bedrock under it.
4) It appears to have been intensely metamorphosed.

19. The diagrams below represent three containers, *A*, *B*, and *C*, which were filled with equal volumes of uniformly sorted plastic beads. Water was poured into each container to determine porosity and infiltration time.



Which data table best represents the porosity and infiltration time of the beads in the three containers?

1)

Beaker	Porosity (%)	Infiltration Time (sec)
A	40	5.2
B	40	2.8
C	40	0.4

2)

Beaker	Porosity (%)	Infiltration Time (sec)
A	40	0.4
B	40	2.8
C	40	5.2

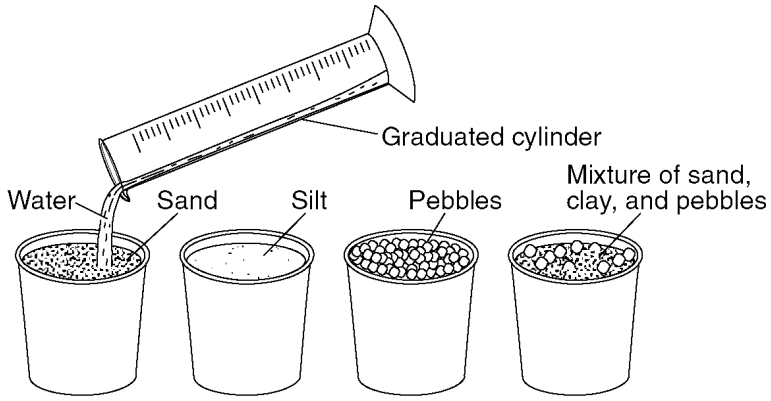
3)

Beaker	Porosity (%)	Infiltration Time (sec)
A	20	5.2
B	30	2.8
C	40	0.4

4)

Beaker	Porosity (%)	Infiltration Time (sec)
A	20	0.4
B	30	2.8
C	40	5.2

20. A student performed a laboratory activity in which water was poured slowly into four cups containing equal volumes of loosely packed sediment samples, as shown in the diagram below. All particles were spherical in shape and uniform in size within a container. After the water level reached the surface of each sample, the student determined the amount of water that had been added.



The results of the activity should have indicated that approximately equal amounts of water were added to the cups of

1) silt and pebbles, only
2) sand, silt, and pebbles, only
3) pebbles and the mixture, only
4) sand, pebbles, and the mixture, only

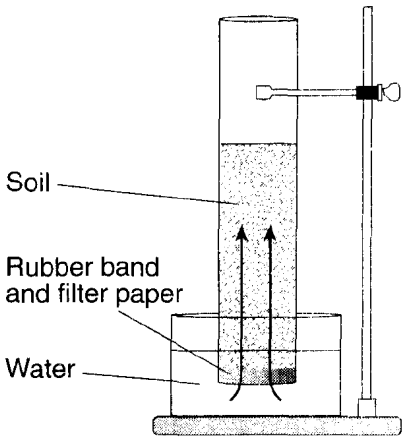
21. The major source of sediments found on the deep ocean bottom is

1) erosion of continental rocks
2) submarine landslides from the mid-ocean ridges
3) icebergs that have broken off of continental glaciers
4) submarine volcanic eruptions

22. Unsorted, angular, rough-surfaced cobbles and boulders are found at the base of a cliff. What most likely transported these cobbles and boulders?

1) running water
2) wind
3) gravity
4) ocean currents

23. The diagram below shows a laboratory setup. The rubber band holds filter paper across the base of the open tube to hold the soil sample. The tube was placed in the water as shown. The upward movement of water is represented by arrows. The height of the water that moved upward within the soil was measured. Students repeated this procedure using soils with different particle sizes. Results of the experiment are shown in the data table.



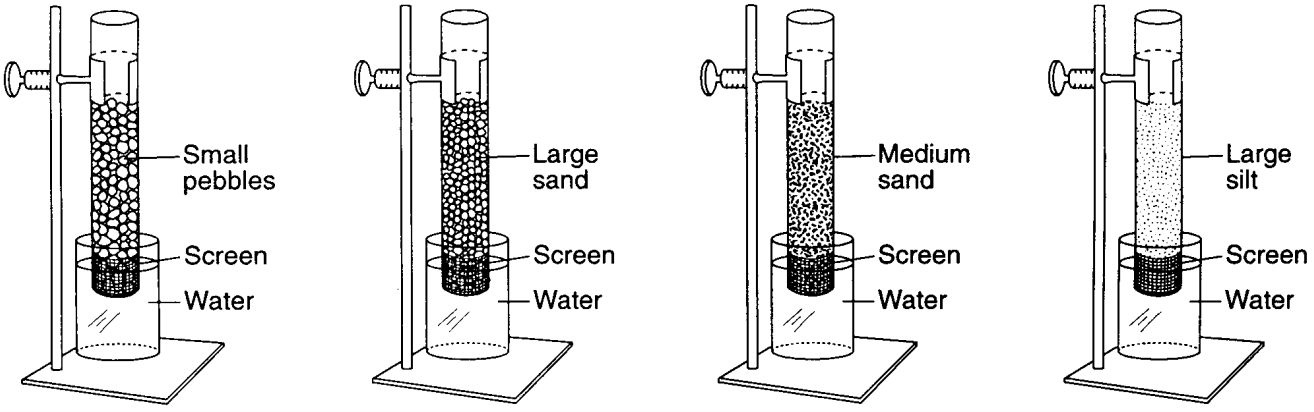
Data Table

Average Soil Particle Diameter (cm)	**Height of Water in Column** (cm)
0.006	30.0
0.2	8.0
1.0	0.5

Results of this experiment lead to the conclusion that

1) capillarity is greater in soils with larger particles
2) capillarity is greater in soils with smaller particles
3) permeability is greater in soils with larger particles
4) permeability is greater in soils with smaller particles

Base your answers to questions **24** through **26** on the diagram below. Columns *A*, *B*, *C*, and *D* are partially filled with different sediments. Within each column, the sediment is uniform in size. A fine wire mesh screen covers the bottom of each column to prevent the sediment from falling out. The lower part of each column has just been placed in a beaker of water. Sediment sizes are not drawn to scale.



24. In an experiment, the beakers of water were removed and replaced with empty beakers. The sediments were allowed to dry. Then water was poured into each column to compare the permeability of the sediments. The permeability rate of the medium sand sample was shown to be

1) less than the silt and pebble samples
2) less than the silt sample but more than the pebble sample
3) greater than the silt sample but less than the pebble sample
4) greater than the silt and pebble samples

25. Which column contains sediment with an average diameter closest to 0.1 centimeter?

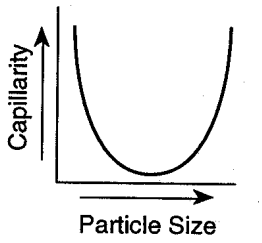
1) *A* 2) *B* 3) *C* 4) *D*

26. In which sediment will capillary action cause the water from the beaker to rise fastest in the column?

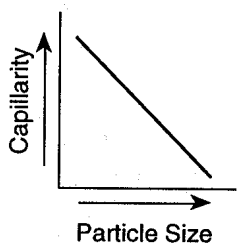
1) small pebbles 2) large sand 3) medium sand 4) large silt

27. Which graph best represents the relationship between the particle size and the capillarity of a sample of soil?

1)



3)



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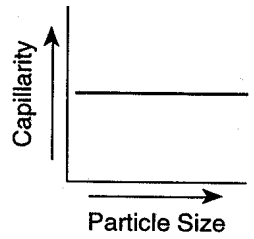
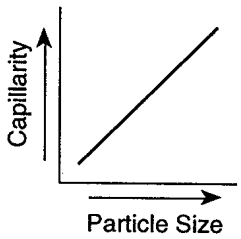


4)



28. A large, scratched boulder is found in a mixture of unsorted, smaller sediments forming a hill in central New Jersey. Which agent of erosion most likely transported and then deposited this boulder?

1) wind 3) ocean waves
2) a glacier 4) running water

29. What change will a pebble usually undergo when it is transported a great distance by streams?

1) It will become jagged and its mass will decrease.
2) It will become jagged and its volume will increase.
3) It will become rounded and its mass will increase.
4) It will become rounded and its volume will decrease.

30. Which sediment is most easily picked up and transported by the wind?

1) cobbles 2) pebbles 3) sand 4) silt

31. Which agent of erosion was primarily responsible for forming the long, narrow, U-shaped valleys in the Finger Lakes region of New York State?

1) wind 3) meandering streams
2) landslides 4) continental glaciers

32. Glaciers often form parallel scratches and grooves in bedrock because glaciers

1) deposit sediment in unsorted piles
2) deposit rounded sand in V-shaped valleys
3) continually melt and refreeze
4) drag loose rocks over Earth's surface

33. The particles in a sand dune deposit are small and very well-sorted and have surface pits that give them a frosted appearance. This deposit most likely was transported by

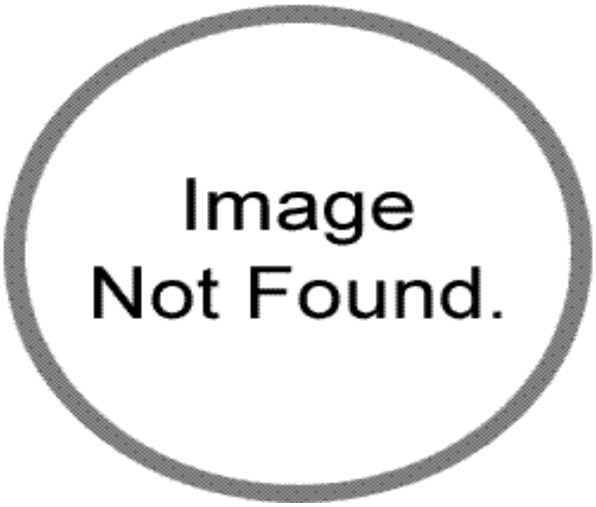
1) ocean currents 3) gravity
2) glacial ice 4) wind

34. The photograph below shows farm buildings partially buried in silt.

Which erosional agent most likely piled the silt against these buildings?

1) glacial ice 3) wind
2) ocean waves 4) mass movement

35. The photograph below shows a large boulder of metamorphic rock in a field in the Allegheny Plateau region of New York State.



The boulder was most likely moved to this location by

1) glacial ice 3) streamfiow
2) prevailing wind 4) volcanic action

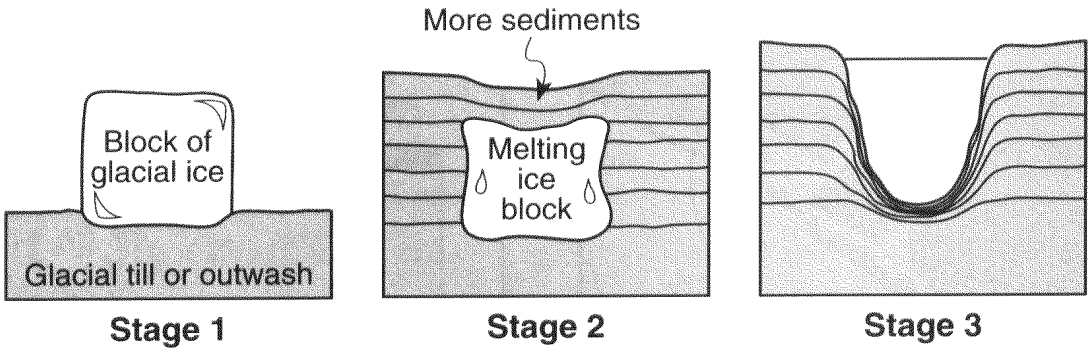
36. Which statement provides the best evidence that New York State's Finger Lakes formed as a result of continental glaciation?

1) The lake surfaces are above sea level.
2) The lakes fill long, narrow U-shaped valleys.
3) The lakes are partially filled with sorted beds of sediment.
4) The lakes are surrounded by sharp, jagged peaks and ridges.

37. How would unsorted piles of angular sediments most likely be transported and deposited?

1) wind 3) ocean waves
2) glaciers 4) running water

38. The cross sections below show a three-stage sequence in the development of a glacial feature.



Which glacial feature has formed by the end of stage 3?

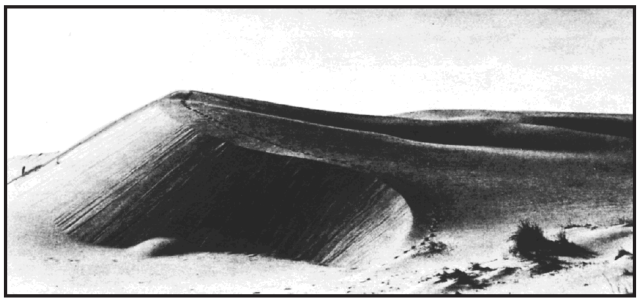
1) kettle lake 2) finger lake 3) drumlin 4) parallel scratches

39. The photograph below shows a valley.

Which agent of erosion most likely produced this valley's shape?

1) wave action
2) moving ice
3) blowing wind
4) flowing water

40. The photograph below shows a sand dune that formed in a coastal area.



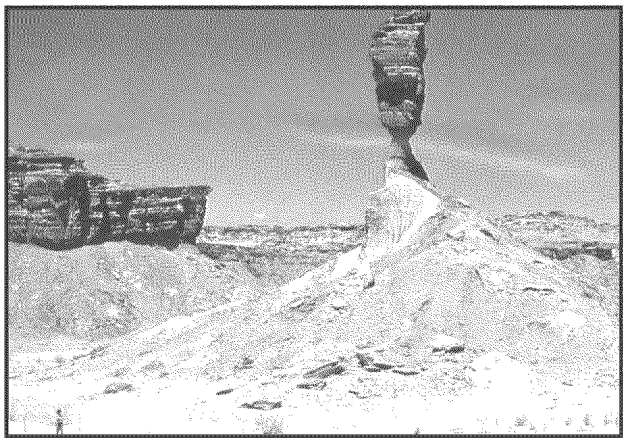
This sand dune was most likely formed by

1) water flowing from the left
2) water flowing from the right
3) wind blowing from the left
4) wind blowing from the right

41. Sharp-edged, irregularly shaped sediment particles found at the base of a rock cliff were probably transported by

1) gravity
2) wind
3) ocean waves
4) running water

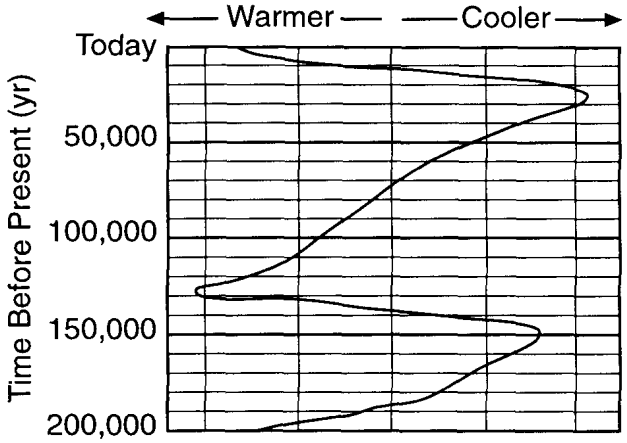
42. The picture below shows a geological feature in the Kalahari Desert of southwestern Africa.



Which process most likely produced the present appearance of this feature?

1) wind erosion
2) volcanic eruption
3) earthquake vibrations
4) plate tectonics

43. The diagram below shows trends in the temperature of North America during the last 200,000 years, as estimated by scientists.



What is the total number of major glacial periods that have occurred in North America in the last 200,000 years?

1) 5 2) 2 3) 3 4) 4

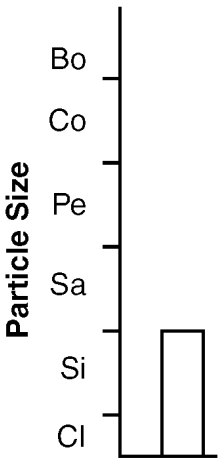
44. What is the largest sediment that can be transported by a stream that has a velocity of 125 cm/sec?

1) cobbles 2) pebbles 3) sand 4) clay

45. Which graph best represents the range of particle sizes that can be carried by a glacier?

Key	
Cl clay	Pe pebbles
Si silt	Co cobbles
Sa sand	Bo boulders

1)



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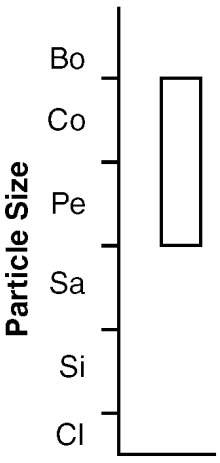
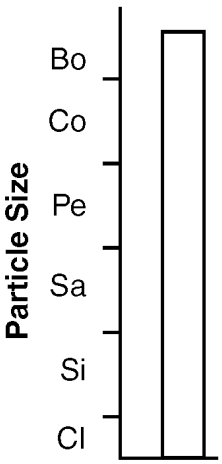


3)



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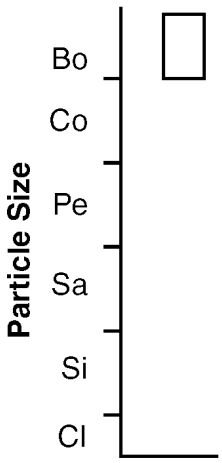
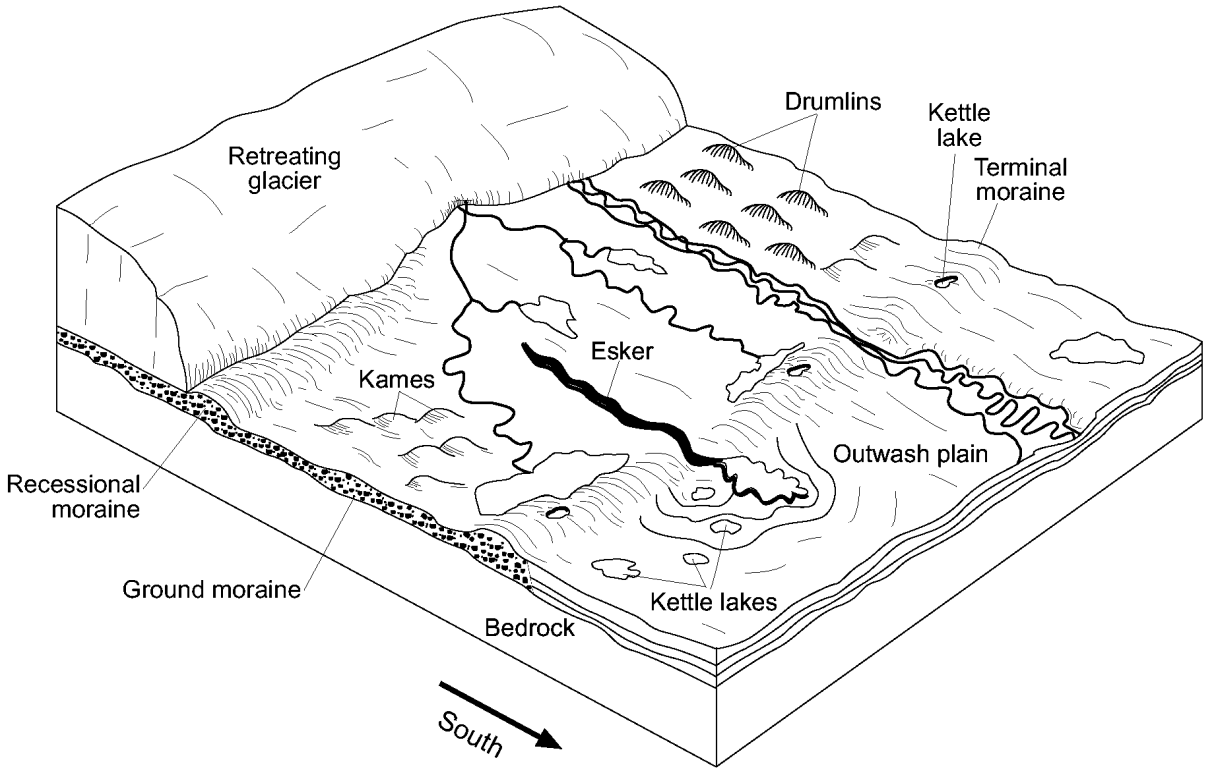


46. Base your answer to the following question on the block diagram below, which shows some of the landscape features formed as the most recent continental glacier melted and retreated across western New York State.



The shape of elongated hills labeled drumlins is most useful in determining the

1) age of the glacier
2) direction of glacial movement
3) thickness of the glacial ice
4) rate of glacial movement

47. Which natural agent of erosion is mainly responsible for the formation of the barrier islands along the southern coast of Long Island, New York?

1) mass movement
2) running water
3) prevailing winds
4) ocean waves

48. In New York State, both the Delaware River and the Susquehanna River flow over landscapes classified as

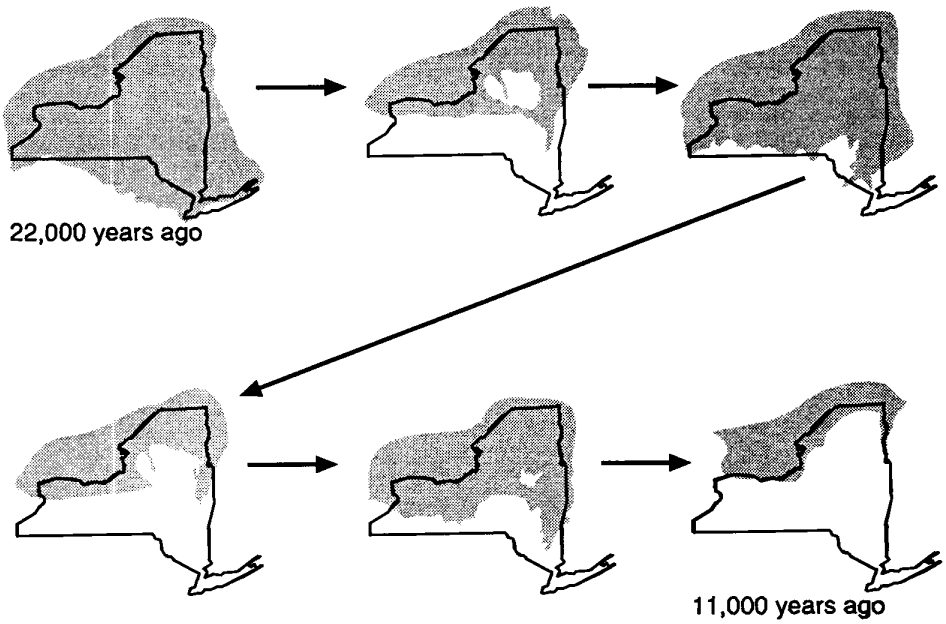
1) mountain regions
2) coastal plains
3) lowlands
4) plateaus

49. Base your answer to the following question on the map below, which shows a portion of a drumlin field. Elevations are in feet.

These drumlins are composed of sediments transported and deposited directly by glacial ice. These sediments are likely to be

1) well-rounded, sand-sized particles
2) well sorted in horizontal layers
3) unsorted and not in layers
4) found underwater, mixed with organic materials

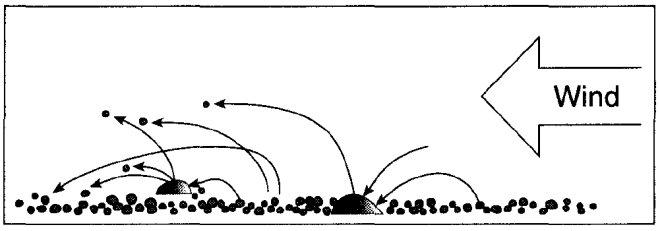
50. Shaded areas on the diagrams below show the part of New York State that was covered by glacial ice during the last ice age.



The best inference that can be made from these diagrams is that this glacial ice

1) was about 1 mile thick at New York City
2) advanced and retreated more than once
3) moved more slowly than the glaciers of earlier ice ages
4) changed the shape of Lake Ontario

51. The diagram below shows sand particles being moved by wind.



At which Earth surface locations is this process usually the most dominant type of erosion?

1) deserts and beaches
2) deltas and floodplains
3) glaciers and moraines
4) mountain peaks and escarpments

52. The four particles shown in the table below are of equal volume and are dropped into a column filled with water.

Particle	Shape	Density
A	flat	2.5 g/cm^3
B	flat	3.0 g/cm^3
C	round	2.5 g/cm^3
D	round	3.0 g/cm^3

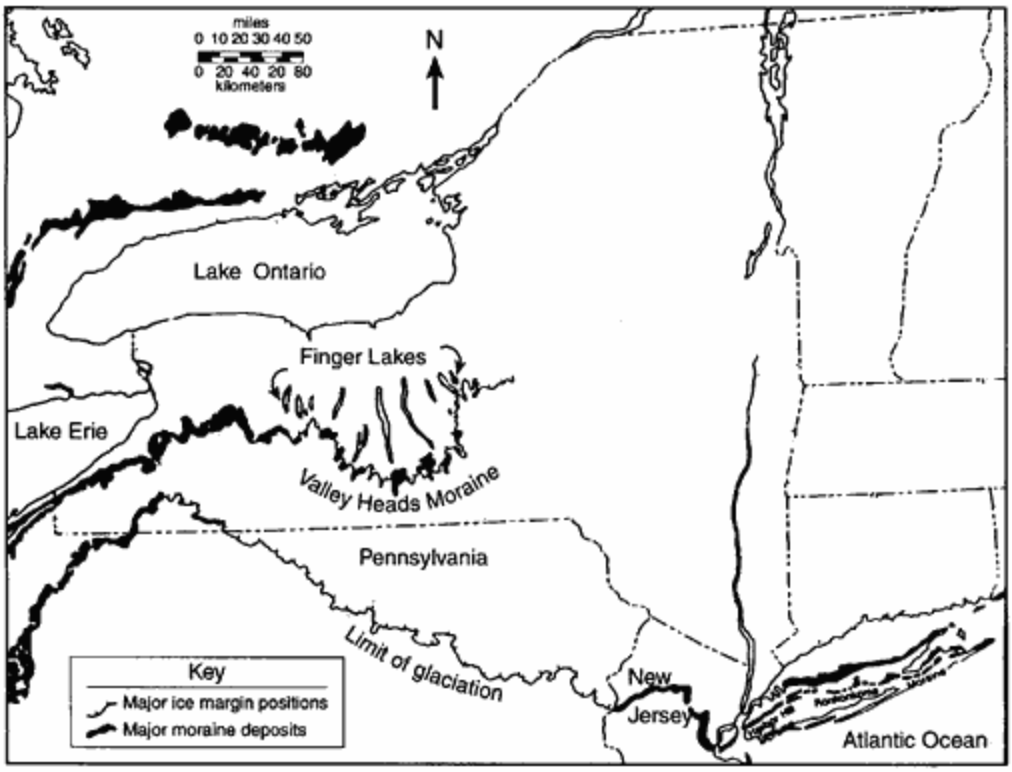
Which particle would usually settle most rapidly?

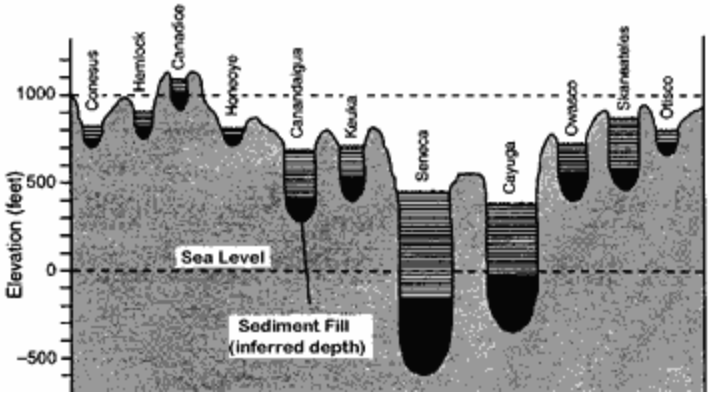
1) *A* 2) *B* 3) *C* 4) *D*

53. Which New York State river flows generally southward?

1) St. Lawrence River
2) Niagara River
3) Genesee River
4) Hudson River

Base your answers to questions **54** and **55** on the map and cross section below. The map shows the shapes and locations of New York State's 11 Finger Lakes and the locations of some major glacial deposits (moraines) left behind by the last ice age. The cross section shows surface elevations, valley depths, and water depths of the Finger Lakes.





54. In which New York State landscape region are the Finger Lakes located?

1) Hudson-Mohawk Lowlands
2) Erie-Ontario Lowlands
3) Allegheny Plateau
4) the Catskills

55. The general shape of the Finger Lakes and the pattern of moraine deposits found across Pennsylvania, New Jersey, and New York are evidence that the continental glacier was advancing from

1) south to north
2) north to south
3) east to west
4) west to east

56. Which New York State landscape region has been most extensively changed by ocean wave erosion during the last 200 years?

1) Atlantic Coastal Lowlands
2) Hudson-Mohawk Lowlands
3) St. Lawrence Lowlands
4) Adirondack Mountains

57. Which type of electromagnetic energy has the longest wavelength?

1) infrared radiation
2) radio wave radiation
3) ultraviolet radiation
4) x-ray radiation

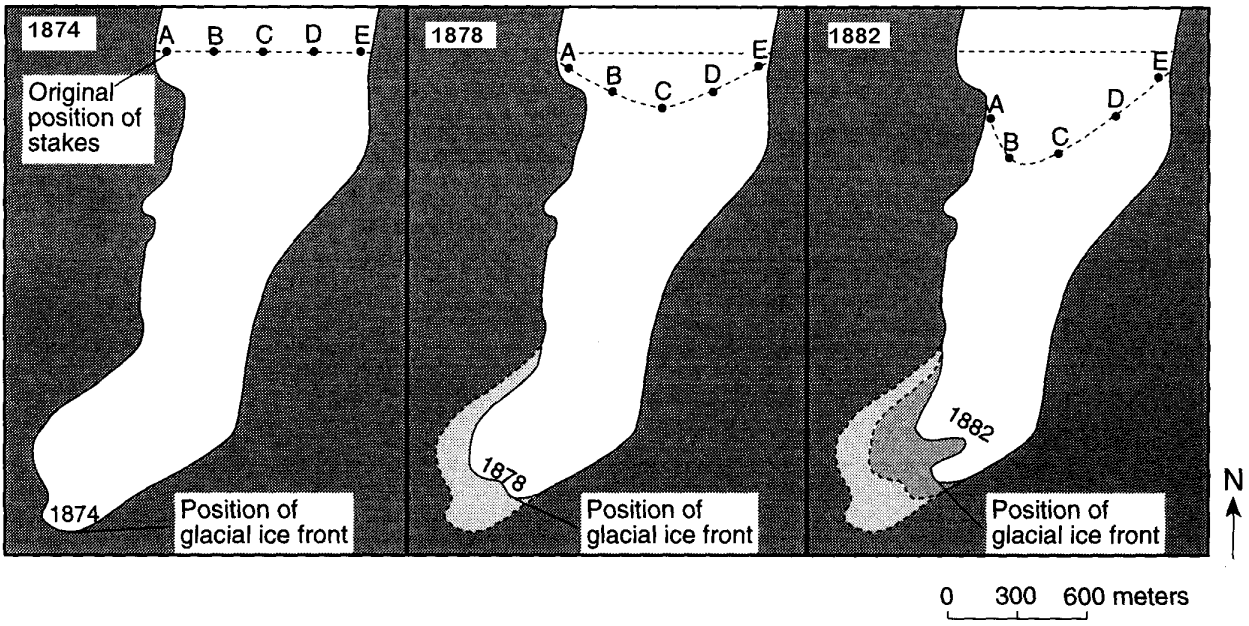
58. The generalized landscape regions of New York State are classified according to

1) bedrock structure and elevation
2) bedrock type and index fossils
3) latitude and longitude
4) climate and topography

59. Energy is transferred from the Sun to Earth mainly by

1) molecular collisions
2) density currents
3) electromagnetic waves
4) red shifts

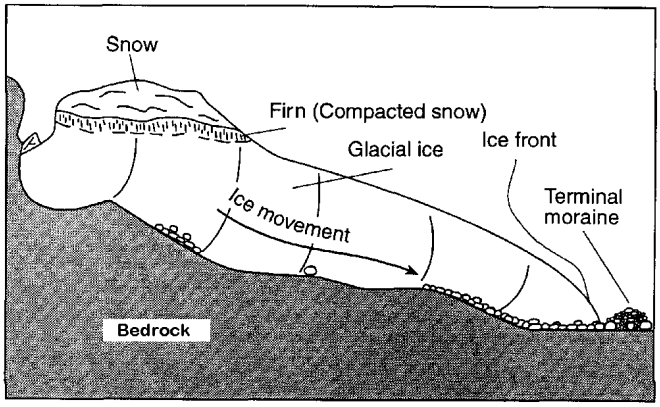
60. Base your answer to the following question on the three maps below, which show the ice movement and changes at the ice front of an alpine glacier from the years 1874 to 1882. Points A, B. C, D, and E represent the positions of large markers placed on the glacial ice and left there for a period of eight years.



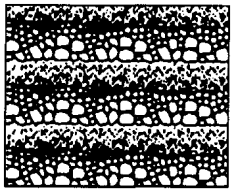
Which statement best describes the changes happening to this glacier between 1874 and 1882?

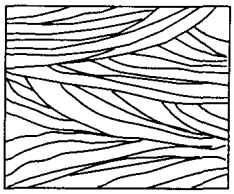
1) The ice front was advancing, and the ice within the glacier was advancing.
2) The ice front was advancing, and the ice within the glacier was retreating.
3) The ice front was retreating, and the ice within the glacier was advancing.
4) The ice front was retreating, and the ice within the glacier was retreating.

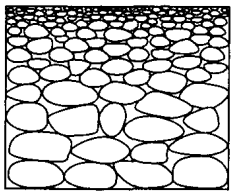
61. Base your answer to the following question on the diagram which represents a profile of a mountain glacier in the northern United States.

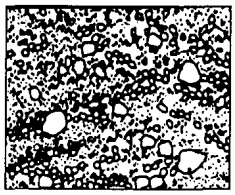


Which cross section best represents the sediment that was transported and deposited by this glacier?

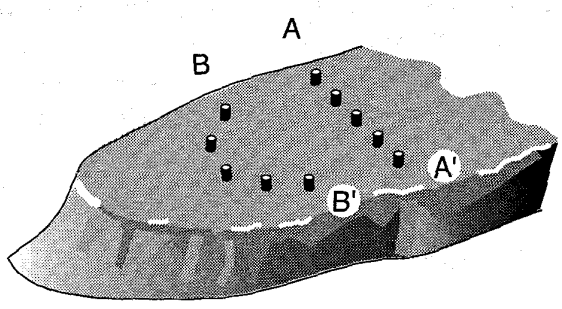
1) 

3) 

2) 

4) 

62. Wooden stakes were placed on a glacier in a straight line as represented by *A–A′* in the diagram below. The same stakes were observed later in the positions represented by *B–B′*.



The pattern of movement of the stakes provides evidence that

1) glacial ice does not move
2) glacial ice is melting faster than it accumulates
3) the glacier is moving faster in the center than on the sides
4) friction is less along the sides of the glacier than in the center

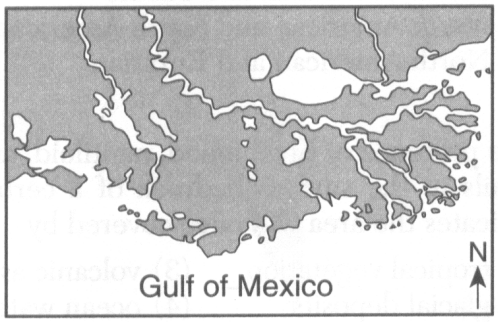
63. New York State's Catskills are classified as which type of landscape region?

1) mountain
2) plateau
3) lowland
4) plain

64. In which New York State landscape region is most of the surface bedrock composed of metamorphic rock?

1) Adirondacks
2) Catskills
3) Erie-Ontario Lowlands
4) Newark Lowlands

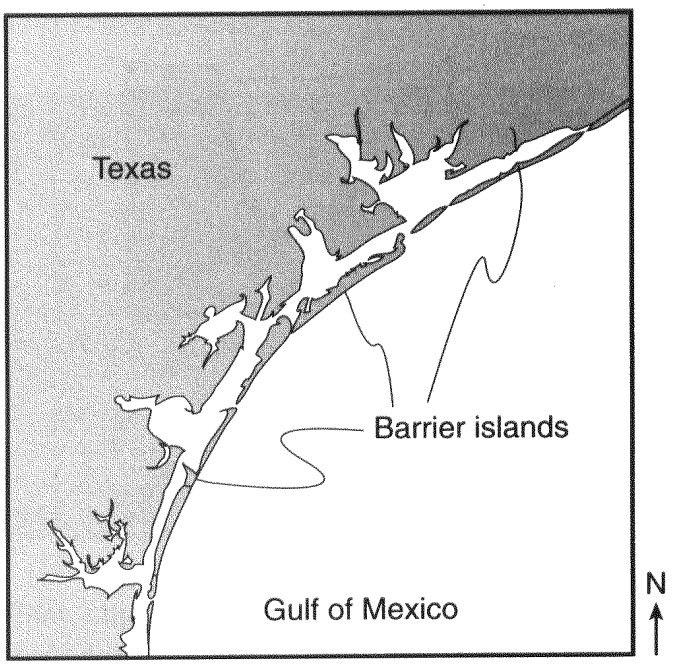
65. The map below shows the large delta that formed as the Mississippi River emptied into the Gulf of Mexico.



Which process was primarily responsible for the formation of the delta?

1) glacial erosion
2) cementation of sediment
3) deposition of sediment
4) mass movement

66. The map below shows barrier islands in the ocean along the coast of Texas.



Which agent of erosion most likely formed these barrier islands?

1) mass movement
2) wave action
3) streams
4) glaciers

67. Which two locations are in the same New York State landscape region?

1) Albany and Old Forge
2) Massena and Mt. Marcy
3) Binghamton and New York City
4) Jamestown and Ithaca

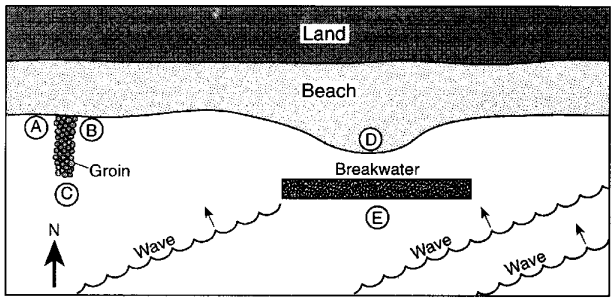
68. Which type of rock is most commonly found as an outcrop in the Allegheny Plateau in New York State?

1) sandstone
2) gneiss
3) basalt
4) slate

69. When the velocity of a stream suddenly *decreases,* the sediment being transported undergoes an increase in

1) particle density
2) erosion
3) deposition
4) mass movement

Base your answers to questions **70** and **71** on the diagram below, which shows ocean waves approaching a shoreline. A groin (a short wall of rocks perpendicular to the shoreline) and a breakwater (an offshore structure) have been constructed alone the beach. Letters *A*, *B*, *C*, *D*, and *E* represent locations in the area.



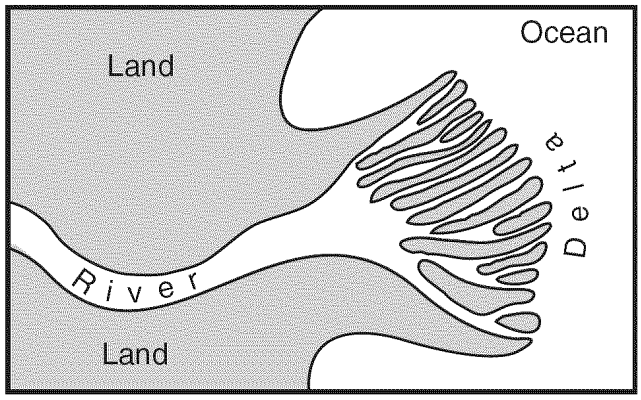
70. The size of the bulge in the beach at position *D* will

1) decrease
2) increase
3) remain the same

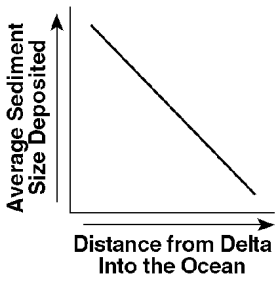
71. At which location will the beach first begin to widen due to sand deposition?

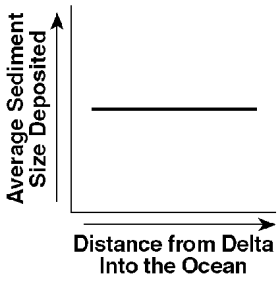
1) *A*
2) *B*
3) *C*
4) *E*

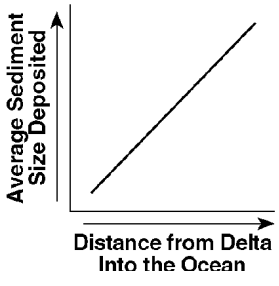
72. The map below shows a river emptying into an ocean, producing a delta.

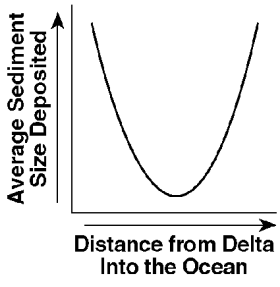


Which graph best represents the relationship between the distance from the river delta into the ocean and the average size of sediments deposited on the ocean floor?

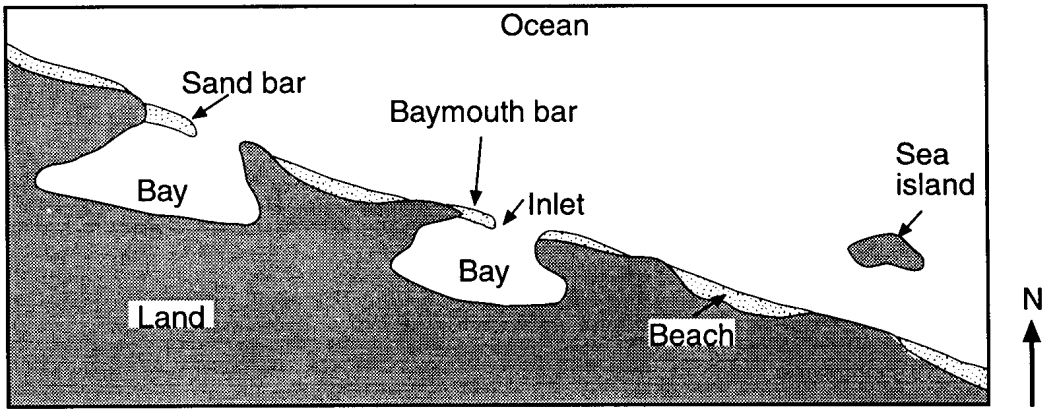
1)


3)


2)


4)


73. The map below shows some features along an ocean shoreline.

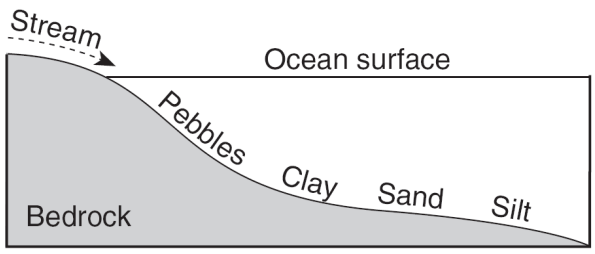


In which general direction is the sand being moved along this shoreline by ocean (long–shore) currents?

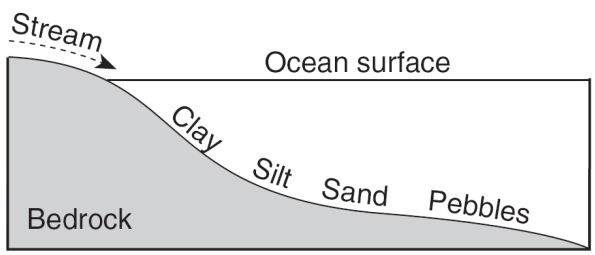
1) northeast 2) southeast 3) northwest 4) southwest

74. Which profile best shows the general depositional pattern that occurs when water from a stream enters the ocean?

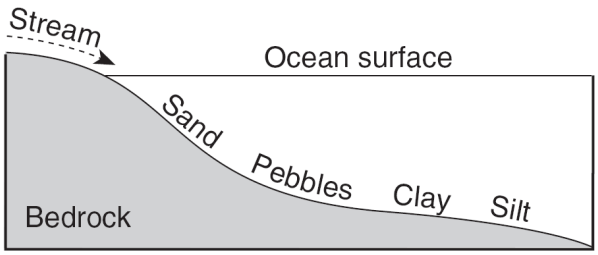
1)



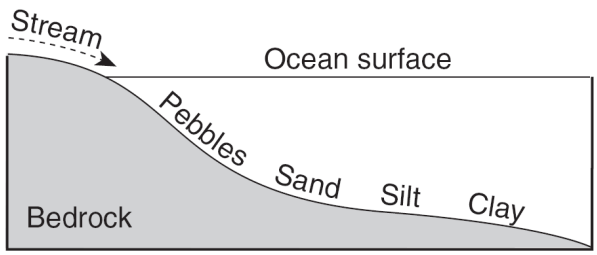
3)



2)

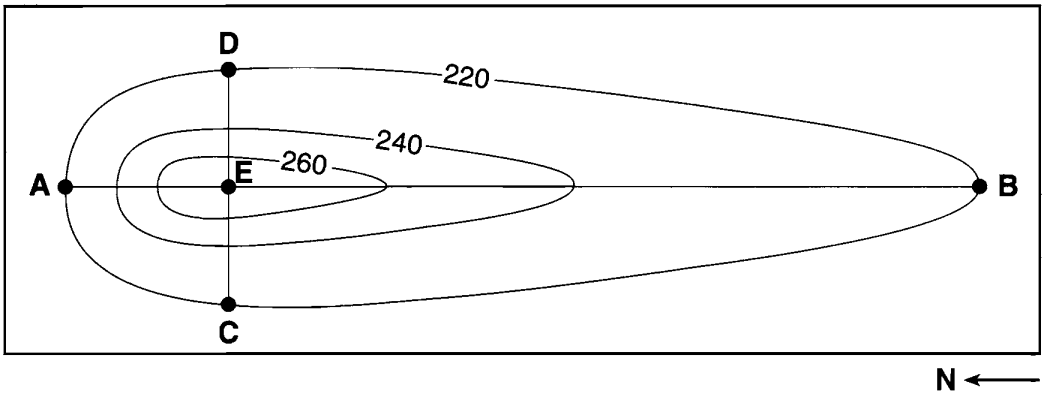


4)



Base your answers to questions **75** through **77** on the contour map below, which shows a hill formed by glacial deposition near Rochester, New York. Letters *A* through *E* are reference points. Elevations are in feet.

Contour Map



75. Which set of characteristics most likely describes the sediment in this glacial deposit?

1) sorted and layered
2) sorted and not layered
3) unsorted and not layered
4) unsorted and layered

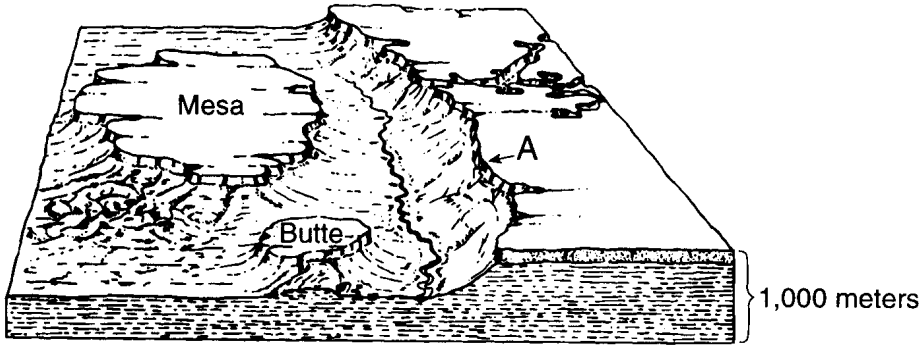
76. This glacial deposit is best identified as

1) a V-shaped valley 2) a sand dune 3) a drumlin 4) an outwash plain

77. The hill shown on this map is found in which New York State landscape region?

1) Adirondack Mountains
2) Catskills
3) Atlantic Coastal Plain
4) Erie-Ontario Lowlands

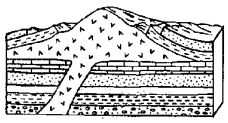
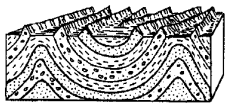
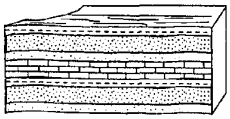
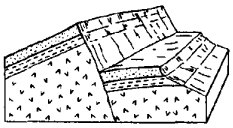
78. Base your answer to the following question on the diagram below, which shows part of a landscape region. Letter *A* indicates a steep cliff formed at the edge of the surface rock layer.



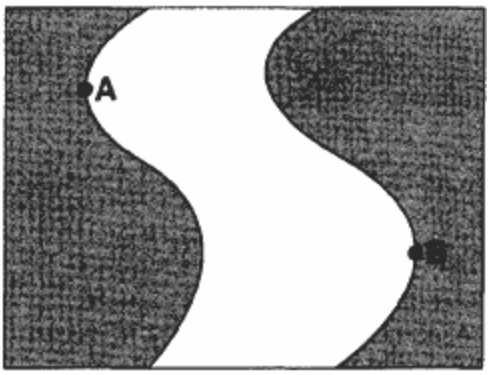
In which type of landscape region is this area located?

1) plateau
2) plain
3) mountain
4) alluvial fan

79. Which cross section best represents the general bedrock structure of New York State's Allegheny Plateau?

1) 
3) 
2) 
4) 

80. The map below shows a meandering river. Points A and B are locations on the banks of the river.



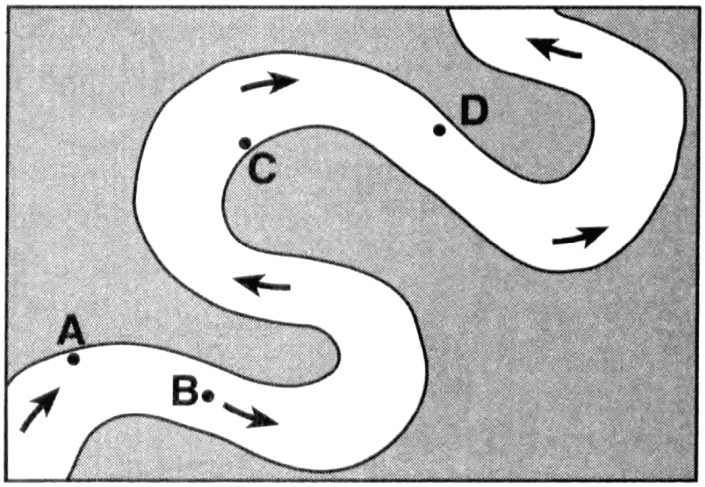
What are the dominant processes occurring at locations A and B?

1) deposition at location A; erosion at location B
2) erosion at location A; deposition at location B
3) deposition at both locations A and B
4) erosion at both locations A and B

81. What is the basic difference between ultraviolet, visible, and infrared radiation?

1) half-life
2) temperature
3) wavelength
4) wave velocity

82. The map below shows a meandering stream. Points *A, B, C,* and *D* represent locations along the stream bottom.



At which location is the greatest amount of sediment most likely being deposited?

1) *A*
2) *B*
3) *C*
4) *D*

83. When electromagnetic energy travels from air into water, the waves are bent due to the density differences between the air and water. This bending is called

1) reflection
2) refraction
3) scattering
4) absorption

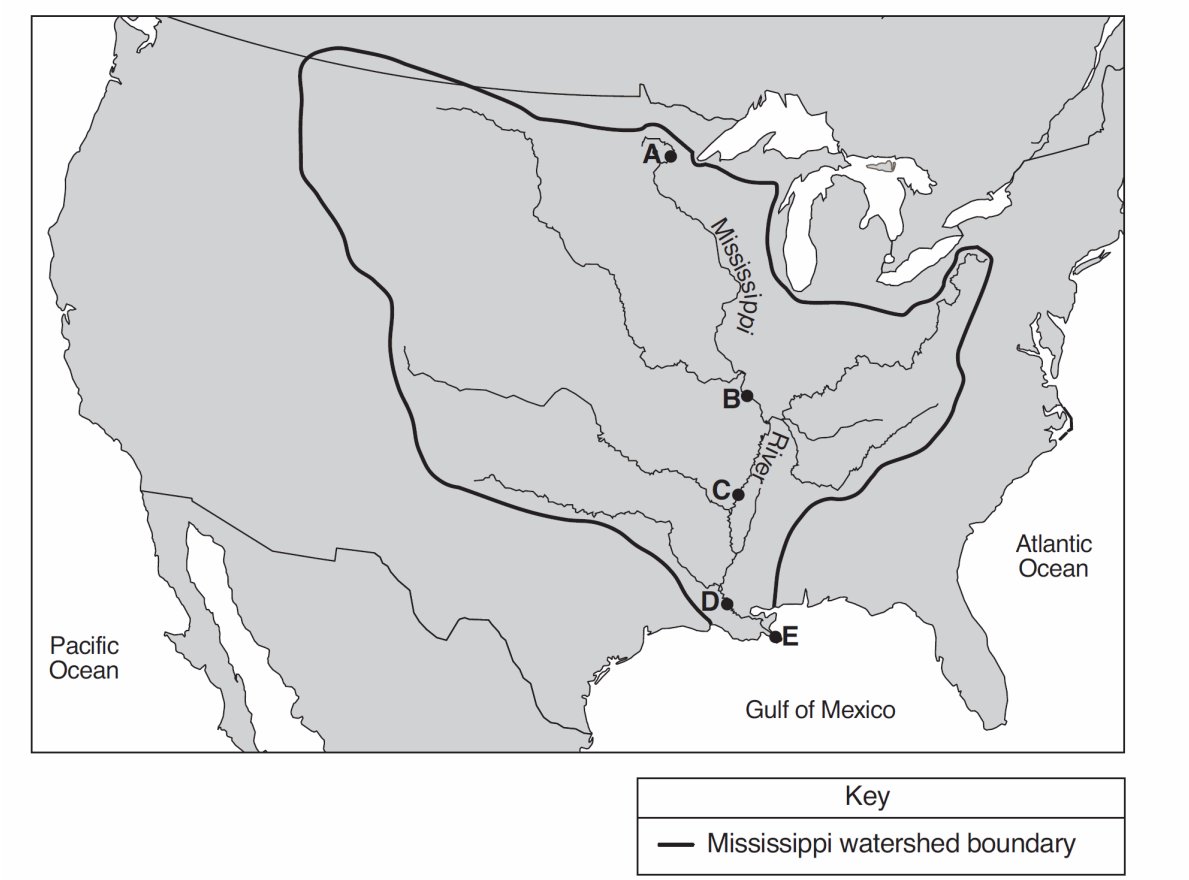
84. Which statement about electromagnetic energy is correct?

1) Violet light has a longer wavelength than red light.
2) X-rays have a longer wavelength than infrared waves.
3) Radar waves have a shorter wavelength than ultraviolet rays.
4) Gamma rays have a shorter wavelength than visible light.

85. Changing the shingles on the roof of a house to a lighter color will most likely reduce the amount of solar energy that is

1) scattered
2) absorbed
3) reflected
4) refracted

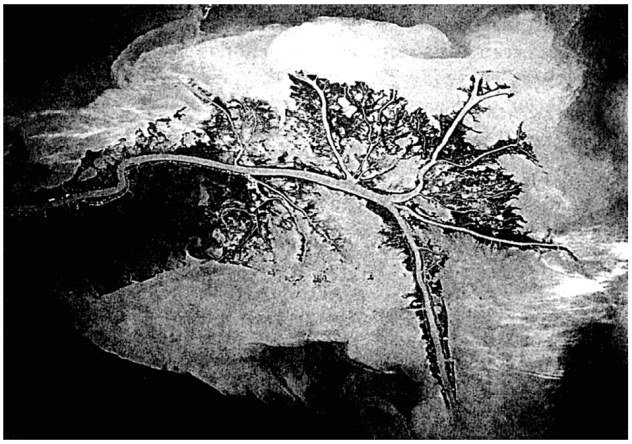
86. Base your answer to the following question on the map below, which shows a portion of the continent of North America and outlines the Mississippi River watershed. Points *A, B, C, D,* and *E* represent locations on Earth's surface.



Which landform is produced at location *E* where the Mississippi River enters the Gulf of Mexico?

1) a delta 2) a drumlin 3) an escarpment 4) an outwash plain

87. The satellite photograph below shows a geologic feature composed of silt, sand, and clay.



The geologic feature shown in the photograph was primarily deposited by which agent of erosion?

1) glaciers 3) wave action
2) wind 4) running water

88. Most of the solar radiation absorbed by Earth's surface is later radiated back into space as which type of electromagnetic radiation?

1) x ray 3) infrared
2) ultraviolet 4) radio wave

89. What happens to most of the sunlight that strikes a dark-colored area of the Earth's surface?

1) It is reflected and scattered as potential energy.
2) It is reflected and diffused as ultraviolet radiation.
3) It is absorbed and reflected as light.
4) It is absorbed and reradiated as heat.

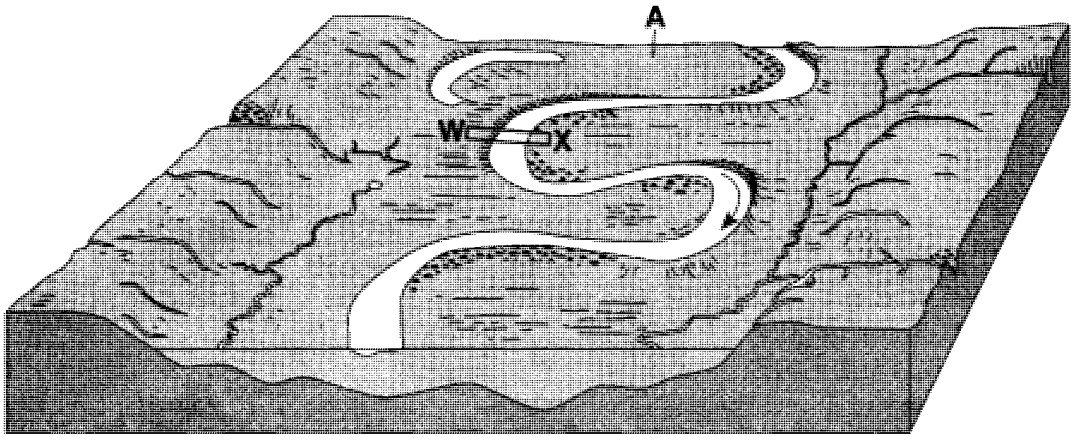
90. Scientists are concerned about the decrease in ozone in the upper atmosphere primarily because ozone protects life on Earth by absorbing certain wavelengths of

1) x-ray radiation 3) infrared radiation
2) ultraviolet radiation 4) microwave radiation

91. Water vapor crystallizes in the atmosphere to form snowflakes. Which statement best describes the exchange of heat energy during this process?

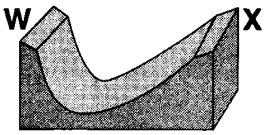
1) Heat energy is transferred from the atmosphere to the water vapor.
2) Heat energy is released from the water vapor into the atmosphere.
3) Heat energy is transferred equally to and from the water vapor.
4) No heat energy is exchanged between the atmosphere and the water vapor.

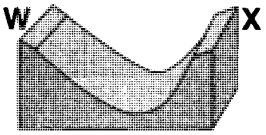
92. Base your answer to the following question on the block diagram below, which represents the landscape features associated with a meandering stream. *WX* is the location of a cross section. Location *A* indicates a landscape feature.

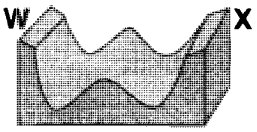


(Not drawn to scale)

Which cross section best represents the shape of the stream bottom at *WX*?

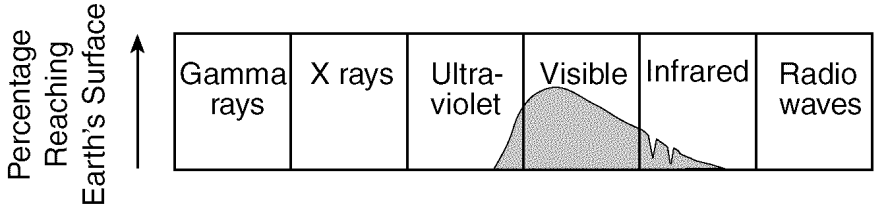
1) 

2) 

3) 

4) 

93. The diagram below shows the types of electromagnetic energy given off by the Sun. The shaded part of the diagram shows the approximate amount of each type actually reaching Earth's surface.



Which conclusion is best supported by the diagram?

1) All types of electromagnetic energy reach Earth's surface.
2) Gamma rays and x-rays make up the greatest amount of electromagnetic energy reaching Earth's surface.
3) Visible light makes up the greatest amount of electromagnetic energy reaching Earth's surface.
4) Ultraviolet and infrared radiation make up the greatest amount of electromagnetic energy reaching Earth's surface.

94. During which phase change will the greatest amount of energy be absorbed by 1 gram of water?

1) melting
2) freezing
3) evaporation
4) condensation

95. When 1 gram of liquid water at 0° Celsius freezes to form ice, how many total Joules of heat are lost by the water?

1) 4.18 2) 2.11 3) 334 4) 2260

96. Which phase change requires water to gain 2260 Joules per gram?

1) solid ice melting
2) liquid water freezing
3) liquid water vaporizing
4) water vapor condensing

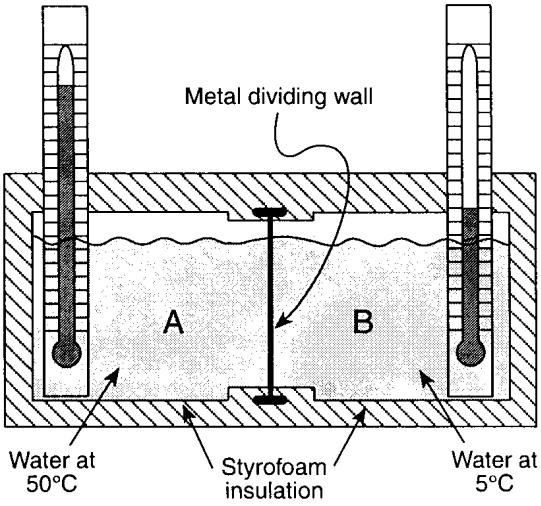
97. What is the heat energy required to change 2 grams of liquid water at 100ºC to water vapor at 100ºC?

1) 334 J 2) 668 J 3) 2260 J 4) 4520 J

98. Earth's atmosphere is warmed when

1) ultraviolet radiation emitted by Earth is absorbed by nitrogen and carbon dioxide in the atmosphere
2) x-ray radiation emitted by Earth is absorbed by nitrogen and carbon dioxide in the atmosphere
3) infrared radiation emitted by Earth is absorbed by carbon dioxide and water vapor in the atmosphere
4) gamma radiation emitted by Earth is absorbed by carbon dioxide and water vapor in the atmosphere

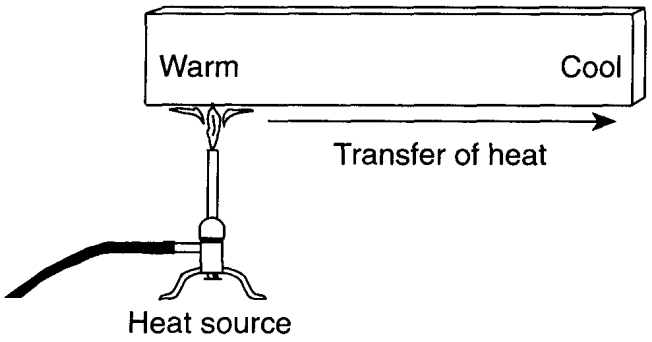
99. The cross section below shows two compartments of water of equal volume insulated by Styrofoam and separated by a metal dividing wall, forming a closed energy system.



When the temperature of the water in compartment *A* decreases by 10°C, the temperature of the water in compartment *B* will

1) remain unchanged
2) decrease by only 5°C
3) decrease by approximately 10°C
4) increase by approximately 10°C

100. Base your answer to the following question on The diagram below shows a solid iron bar that is being heated in a flame.



The primary method of heat transfer in the solid iron bar is

1) convection
2) conduction
3) absorption
4) advection

101. What is the relative humidity when the dry-bulb temperature is 16°C and the wet-bulb temperature is 14°C?

1) 90% 2) 80% 3) 14% 4) 13%

102. Which weather variable can be determined by using a psychrometer?

1) barometric pressure
2) cloud cover
3) relative humidity
4) wind speed

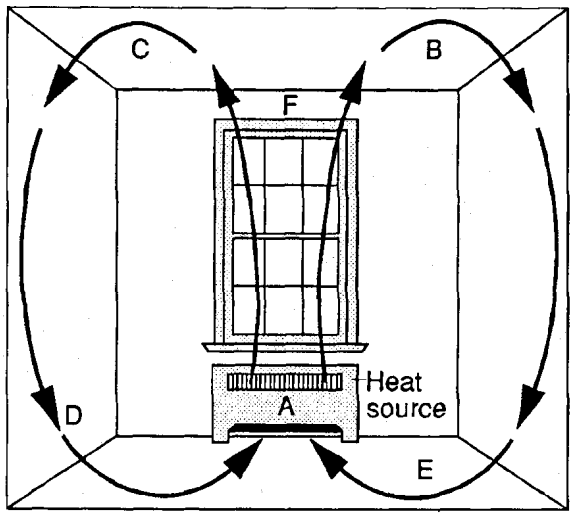
103. Which gas in the atmosphere has the most influence on day-to-day weather changes?

1) ozone
2) oxygen
3) water vapor
4) carbon dioxide

104. On a cold winter day, the air temperature is 2°C and the wet-bulb temperature is –1°C. What is the relative humidity at this location?

1) 6% 2) 37% 3) 51% 4) 83%

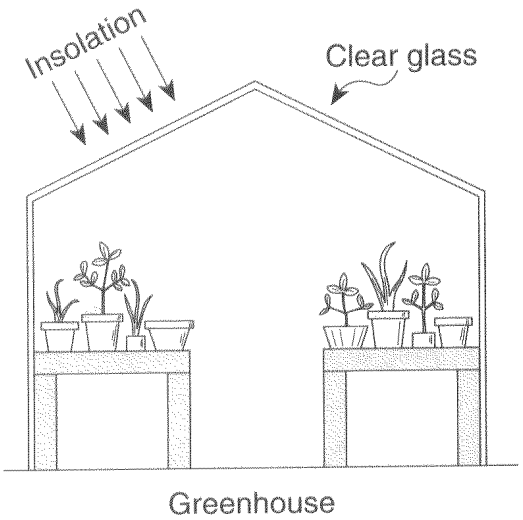
105. Base your answer to the following question on the diagram below. The diagram shows the pattern of air movement within a closed room.



What color should the heat source in the room be painted in order to radiate the most heat?

1) red 2) black 3) green 4) silver

106. The diagram below shows a greenhouse.



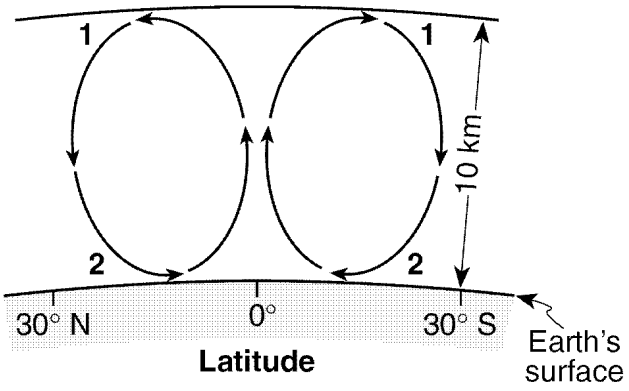
What is the primary function of the clear glass of the greenhouse?

1) The glass reduces the amount of insolation entering the greenhouse.
2) The glass allows all wavelengths of radiation to enter and all wavelengths of radiation to escape.
3) The glass allows short wavelengths of radiation to enter, but reduces the amount of longwavelength radiation that escapes.
4) The glass allows long wavelengths of radiation to enter, but reduces the amount of shortwavelength radiation that escapes.

107. A container of water is placed in an open outdoor area so that the evaporation rate can be observed. The water will most likely evaporate fastest when the weather is

1) cool, humid, and windy
2) cool, dry, and calm
3) warm, humid, and calm
4) warm, dry, and windy

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

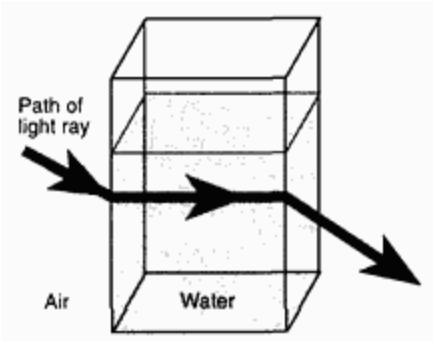


(Not drawn to scale)

The air movement shown in the cross section is due to the process of

1) condensation 2) conduction 3) evaporation 4) convection

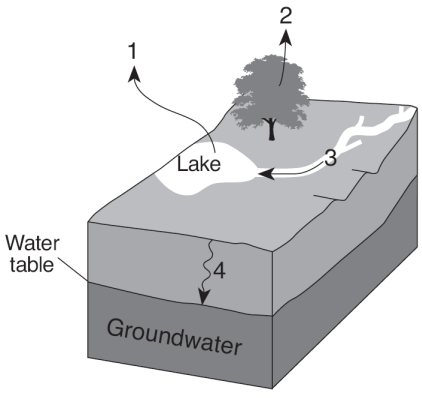
109. The diagram below represents the path of visible light as it travels from air to water to air through a glass container of water.



The light did *not* travel in a straight line because of

1) convection 3) absorption
2) scattering 4) refraction

110. The arrows in the block diagram below show the movement of water after it has fallen as precipitation.



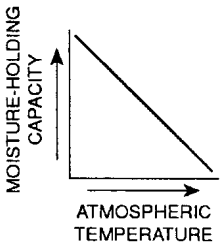
Which arrow indicates the process of transpiration?

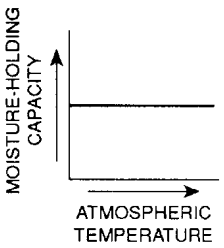
1) 1 2) 2 3) 3 4) 4

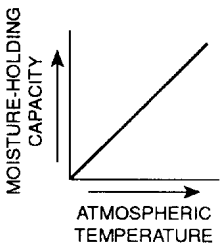
111. A student uses a sling psychrometer outdoors on a clear day. The dry-bulb (air) temperature is 10°C. The water on the wet bulb will most likely

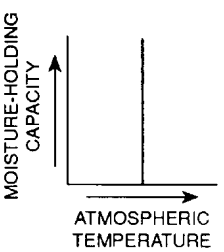
1) condense, causing the wet-bulb temperature to be higher than the air temperature
2) condense, causing the wet-bulb temperature to be equal to the air temperature
3) evaporate, causing the wet-bulb temperature to be lower than the air temperature
4) evaporate, causing the wet-bulb temperature to be equal to the air temperature

112. Which graph best represents the relationship between the moisture-holding capacity (ability to hold moisture) of the atmosphere and atmospheric temperature?

1)


3)


2)


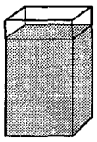
4)


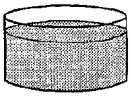
113. Liquid water will continue to evaporate from the Earth's surface, increasing the amount of atmospheric water vapor, until

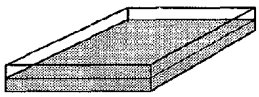
1) transpiration occurs
2) the relative humidity falls below 50%
3) the atmosphere becomes saturated
4) the temperature of the atmosphere becomes greater than the dewpoint temperature

114. All of the containers shown below contain the same volume of water and are at room temperature. In a two-day period, from which container will the *least* amount of water evaporate?

1) 

2) 

3) 

4) 

115. When a person leaves the ocean after swimming on a windy day, the person usually feels cold because

1) water evaporates from the skin
2) water condenses on the skin
3) salt is absorbed through the skin
4) radiation is absorbed through the skin

Answer Key

term 4 practice

1.	4	42.	1	83.	2
2.	4	43.	2	84.	4
3.	2	44.	2	85.	2
4.	4	45.	3	86.	1
5.	2	46.	2	87.	4
6.	1	47.	4	88.	3
7.	1	48.	4	89.	4
8.	1	49.	3	90.	2
9.	4	50.	2	91.	2
10.	1	51.	1	92.	1
11.	1	52.	4	93.	3
12.	1	53.	4	94.	3
13.	4	54.	3	95.	3
14.	3	55.	2	96.	3
15.	4	56.	1	97.	4
16.	4	57.	2	98.	3
17.	3	58.	1	99.	4
18.	3	59.	3	100.	2
19.	1	60.	3	101.	2
20.	2	61.	4	102.	3
21.	1	62.	3	103.	3
22.	3	63.	2	104.	3
23.	2	64.	1	105.	2
24.	3	65.	3	106.	3
25.	2	66.	2	107.	4
26.	4	67.	4	108.	4
27.	3	68.	1	109.	4
28.	2	69.	3	110.	2
29.	4	70.	2	111.	3
30.	4	71.	2	112.	2
31.	4	72.	1	113.	3
32.	4	73.	2	114.	1
33.	4	74.	4	115.	1
34.	3	75.	3		
35.	1	76.	3		
36.	2	77.	4		
37.	2	78.	1		
38.	1	79.	2		
39.	2	80.	4		
40.	4	81.	3		
41.	1	82.	3		