Weathering, Erosion and Deposition Multiple Choice

1. New York State's generalized landscape regions are identified primarily on the basis of elevation and

(1) bedrock structure
(2) climate zones
(3) geologic age
(4) latitude

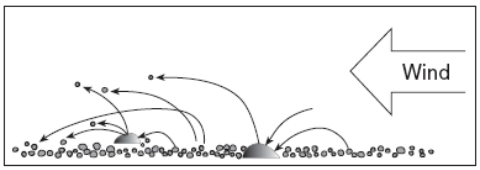
2. Most sandstone bedrock is composed of sediment that was

(1) sorted by size and not layered
(2) sorted by size and layered
(3) unsorted and not layered
(4) unsorted and layered

3. 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
(2) prevailing wind
(3) stream flow
(4) volcanic action

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



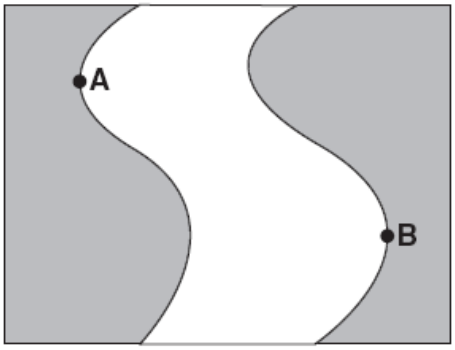
At which Earth surface locations is this process usually the most dominant type of erosion?

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

5. During a heavy rainstorm, runoff is most likely to occur if the surface soil if

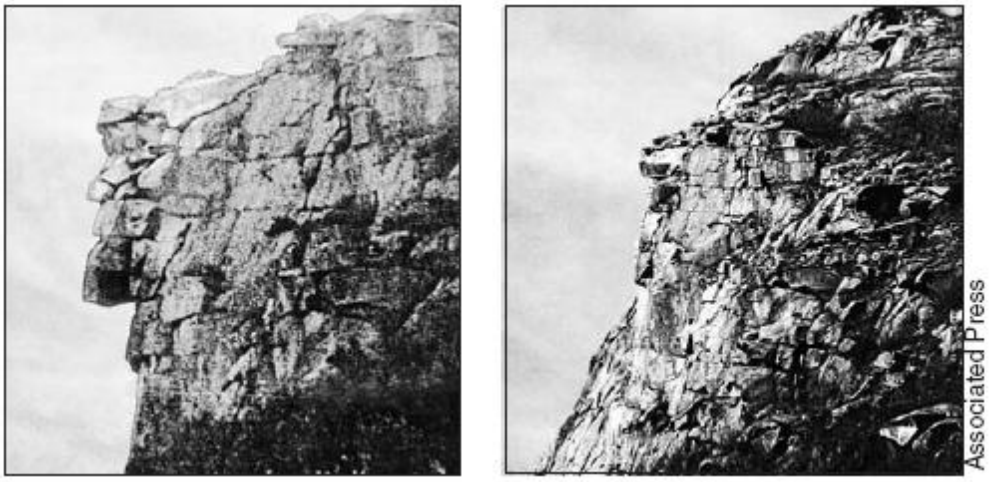
(1) firmly packed clay-sized particles
(2) loosely packed sand-sized particles
(3) covered by trees, shrubs, and grasses
(4) unsaturated and has a gentle slope

6. 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*

Base your answers to questions 7 to 10 on the photographs and news article below.



Granite profile of the Old Man of the Mountain is shown before the collapse, and after

Old Man's Loss Felt in New Hampshire

FRANCONIA, N.H. — Crowds of visitors were drawn to Franconia Notch on Sunday to mourn the loss of New Hampshire's well-known symbol — the Old Man of the Mountain granite profile. The 700-ton natural formation was just a pile of rocks after breaking loose from its 1,200-foot-high mountainside perch. It was unclear when the outcropping fell because clouds had obscured the area Thursday and Friday; a state park trail crew discovered the collapse Saturday morning. The famous mountain's history dates millions of years. Over time, nature carved out a 40-foot-tall profile resembling an old man's face, and it eventually became New Hampshire's most recognizable symbol.

The Buffalo News, May 5, 2003

7. Which agent of erosion is most likely responsible for the collapse of the granite profile?

(1) running water
(2) glacial ice
(3) wave action
(4) mass movement

8. The granite bedrock formed when

(1) sediments were buried
(2) a volcano erupted
(3) magma cooled underground
(4) limestone recrystallized

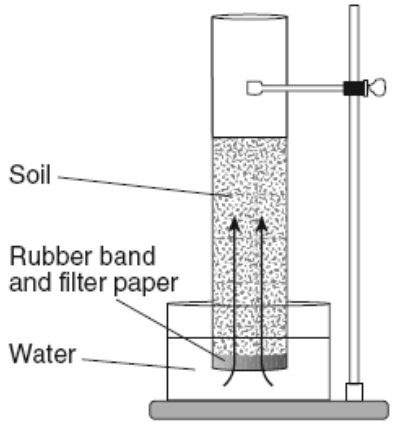
9. The rock of the Old Man of the Mountain most likely includes a mineral with a composition of

(1) NaCl
(2) SiO_2
(3) FeS_2
(4) PbS

10. What does granite bedrock found high on a mountaintop indicate?

(1) The crust has been sinking.
(2) Global temperatures have cooled.
(3) A large amount of erosion has occurred.
(4) Sea level has risen.

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

11. 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

12. 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

13. Deposition within a meandering stream usually occurs on the inside of the curves because the

(1) water velocity decreases
(2) stream gradient increases
(3) water is deeper
(4) stream is narrower

?

14 The photograph below shows a valley. Which agent of erosion most likely produced this valley's shape?

?

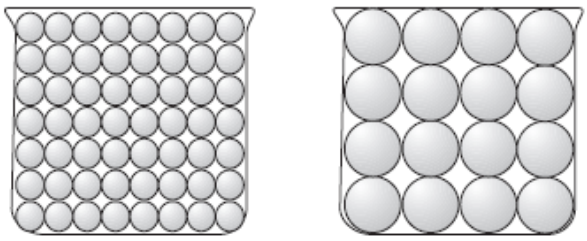
(1) wave action (3) blowing wind
(2) moving ice (4) flowing water

15 Which process led to the formation of thick salt deposits found in the bedrock at some locations in New York State?

?

(1) melting (3) condensation
(2) runoff (4) evaporation

16 The diagram below shows two identical containers filled with uniform particles that were sorted by size.

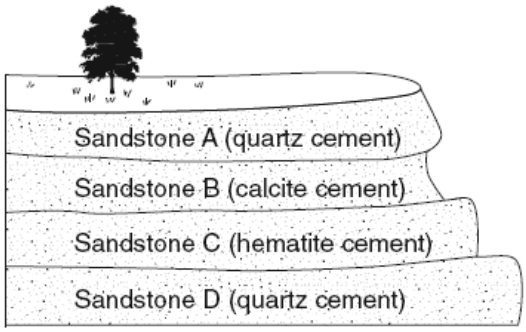


?

Which characteristic is most likely the same for these particle-filled containers?

(1) infiltration rate (3) capillarity
(2) water retention (4) porosity

17 The diagram below shows an outcrop of different layers of sandstone in a region receiving heavy rainfall.



Which sandstone layer appears to be the *least* resistant to weathering?

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

?

18 Which characteristic would most likely remain constant when a limestone cobble is subjected to extensive abrasion?

(1) shape (3) volume
(2) mass (4) composition

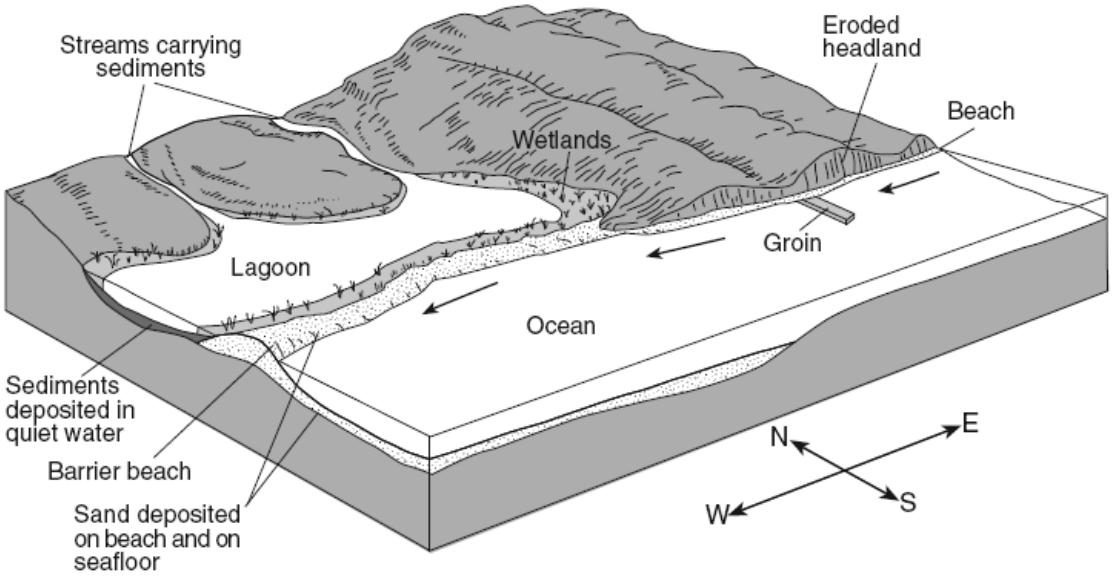
?

19. Which soil conditions normally result in the greatest amount of runoff?

(1) low permeability and gentle slope
(2) low permeability and steep slope
(3) high permeability and gentle slope
(4) high permeability and steep slope

?

Base your answers to the next 4 questions on the diagram below. The arrows show the direction in which sediment is being transported along the shoreline. A barrier beach has formed, creating a lagoon (a shallow body of water in which sediments are being deposited). The eroded headlands are composed of diorite bedrock. A groin has recently been constructed. Groins are wall-like structures built into the water perpendicular to the shoreline to trap beach sand.



20 The groin structure will change the pattern of deposition along the shoreline, initially causing the beach to become

?

(1) wider on the western side of the groin
(2) wider on the eastern side of the groin
(3) narrower on both sides of the groin
(4) wider on both sides of the groin

21 Which two minerals are most likely found in the beach sand that was eroded from the headlands?

?

(1) quartz and olivine
(2) plagioclase feldspar and amphibole
(3) potassium feldspar and biotite
(4) pyroxene and calcite

22 The sediments that have been deposited by streams flowing into the lagoon are most likely

?

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

23 Which event will most likely occur during a heavy rainfall?

?

(1) Less sediment will be carried by the streams.
(2) An increase in sea level will cause more sediment to be deposited along the shoreline.
(3) The shoreline will experience a greater range in tides.
(4) The discharge from the streams into the lagoon will increase.

24 Which event is an example of chemical weathering?

?

(1) rocks falling off the face of a steep cliff
(2) feldspar in granite being crushed into clay sized particles
(3) water freezing in cracks in a roadside outcrop
(4) acid rain reacting with limestone bedrock

25 A meandering stream deposits most of its sediments on the

?

(1) inside of meanders where the stream flows faster
(2) inside of meanders where the stream flows slower
(3) outside of meanders where the stream flows faster
(4) outside of meanders where the stream flows slower

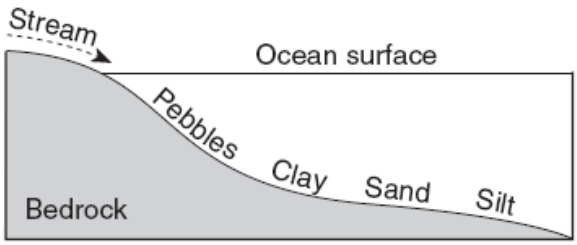
26 Which natural agent of erosion is mainly responsible for the formation of the barrier islands along the southern coast of Long Island, New York?

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

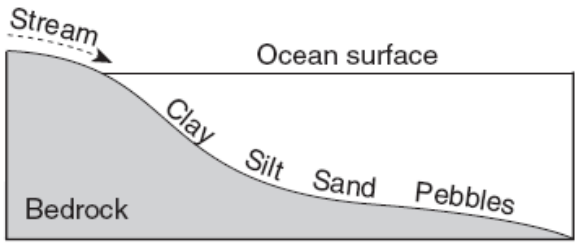
27 A soil sample with a large amount of space between the particles will have a

(1) low permeability rate (3) high porosity
(2) low infiltration rate (4) high capillarity

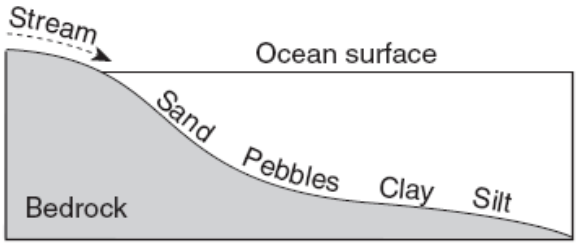
28 Which profile best shows the general depositional pattern that occurs when water from a stream enters the ocean?



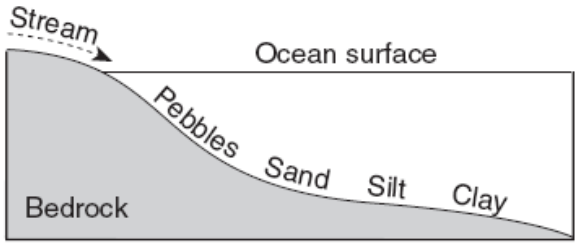
(1)



(3)



(2)



(4)

29 The largest sediment particles that can be transported by a stream traveling at a velocity of 200 centimeters per second are

(1) boulders (3) pebbles
(2) cobbles (4) sand

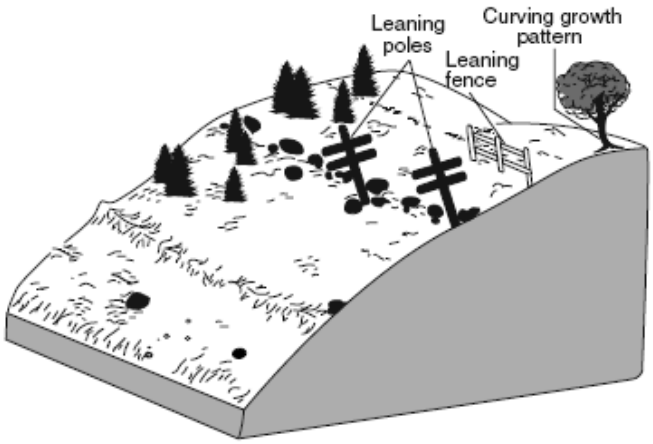
30 Which agent of erosion was primarily responsible for forming the long, narrow, U-shaped valleys in the Finger Lakes region of New York State?

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

31 Which two landscape regions in New York State have the oldest surface bedrock?

(1) Allegheny Plateau and Newark Lowlands
(2) Tug Hill Plateau and Erie-Ontario Lowlands
(3) Taconic Mountains and the Catskills
(4) Adirondack Mountains and Hudson Highlands

33 The diagram below shows the surface features of a landscape. Based on the features shown, which erosional agent had the greatest effect on tree growth and the structures that humans have built on this landscape?



?

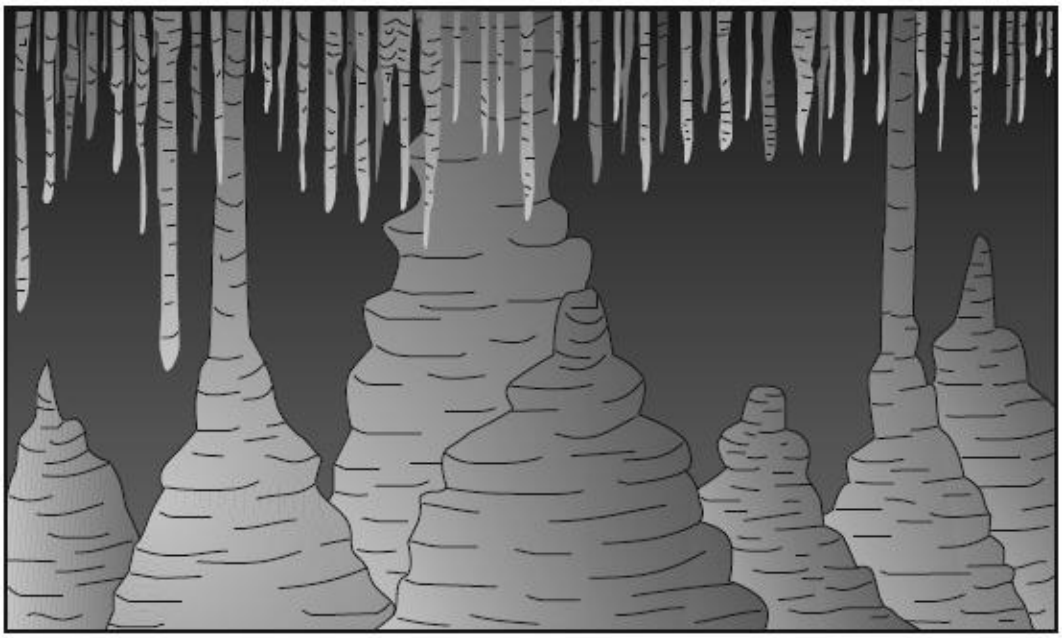
(1) running water (3) prevailing wind
(2) moving ice (4) mass movement

34 What is the minimum water velocity needed in a stream to maintain the transportation of the smallest boulder?

(1) 100 cm/sec (3) 300 cm/sec
(2) 200 cm/sec (4) 500 cm/sec

?

35 The diagram below shows some features in a cave. Which type of rock was chemically weathered by acidic groundwater to produce the cave and its features?



?

(1) siltstone (3) quartzite
(2) basalt (4) limestone

Base your answers to questions 36 through 40 on the passage and map below. The map shows the generalized landscape regions of Vermont.

Landscape Regions of Vermont

Most of Vermont's landscape regions consist of ancient, weathered mountains that were covered by several ice sheets during the last ice age. When the ice melted, sand, cobbles, and boulders were deposited throughout the state. Vermont is divided into six landscape regions.

(1) The Vermont Lowlands region has a mild climate, with Lake Champlain moderating its temperature.

(2) The Green Mountains run the length of Vermont and were formed over 400 million years ago. Most of the bedrock is metamorphic and the region is known for its deposits of talc and asbestos.

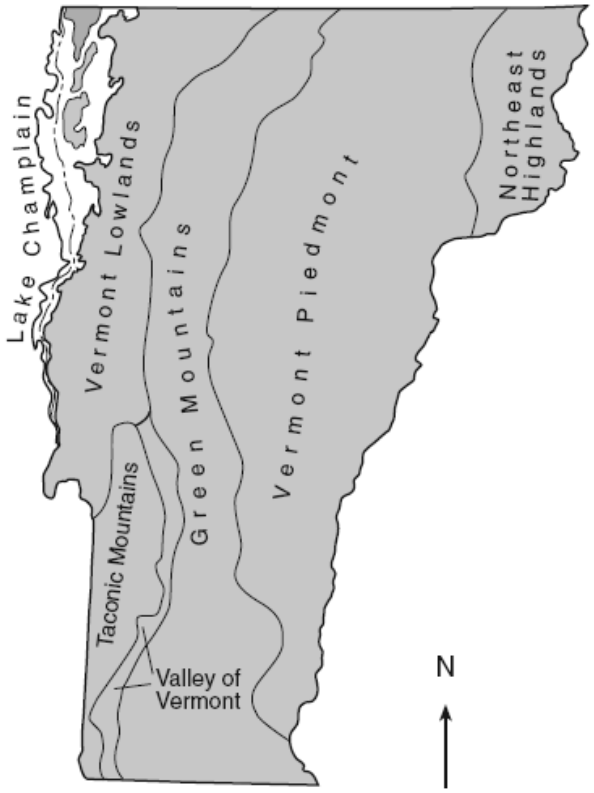
(3) The Taconic Mountains extend into New York State. Slate and marble are commonly mined in this region.

(4) The Valley of Vermont is a narrow valley between two mountain ranges. Most of the bedrock in the region is limestone and marble.

(5) The Vermont Piedmont covers the largest area of the state. This region consists of rolling hills and valleys. Granite mining is an important industry.

(6) The Northeast Highlands is a mountainous region composed of granite bedrock.

Generalized Landscape Regions of Vermont



36 The classification of landscape regions is primarily based on which factors?

(1) climate, vegetation, and surface features
(2) bedrock type, structure, and elevation
(3) state boundaries, streams, and rivers
(4) nearness to mountains, lakes, and oceans

37 Which Vermont landscape region is a continuation of New York State's Champlain Lowlands landscape?

(1) Vermont Lowlands
(2) Valley of Vermont
(3) Taconic Mountains
(4) Green Mountains

38 During which geologic period did a major orogeny form the Taconic Mountains?

(1) Cretaceous (3) Devonian
(2) Permian (4) Ordovician

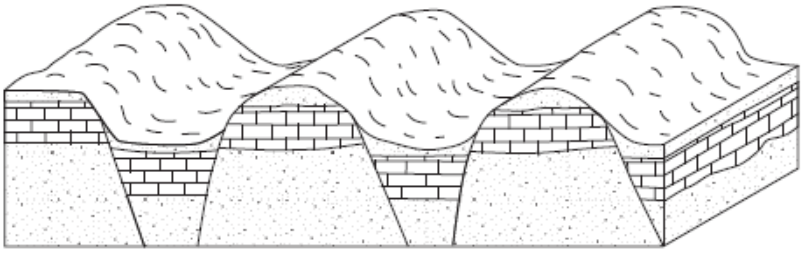
39 Some of the bedrock in the Green Mountains is actually green in color because of the presence of the mineral chlorite. Which other mineral can cause rocks to appear green?

(1) sulfur (3) olivine
(2) magnetite (4) halite

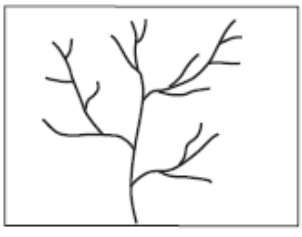
40 Which processes formed the granite that is mined in Vermont?

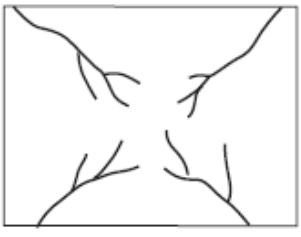
(1) compaction and cementation of sediments
(2) cooling and solidification of magma
(3) uplift and weathering of bedrock
(4) application of heat and pressure to shale

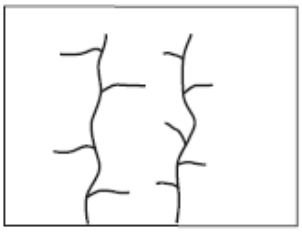
The block diagram below shows a region that has undergone faulting.

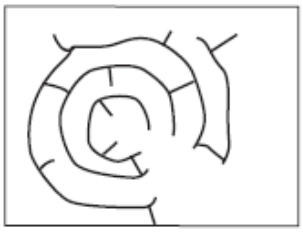


41 Which map shows the stream drainage pattern that would most likely develop on the surface of this region?

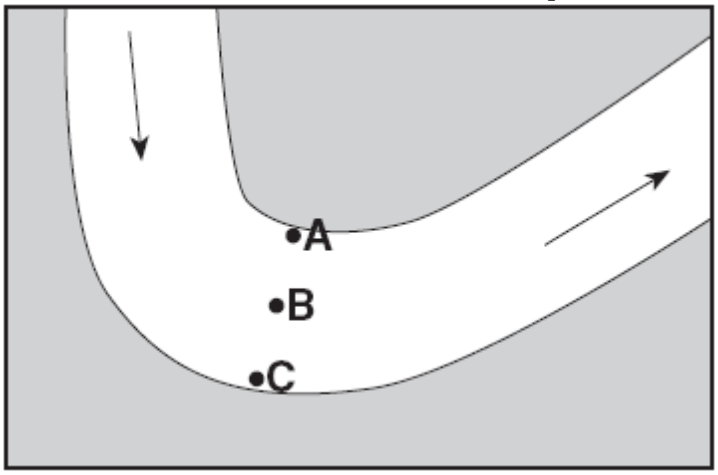

(1)


(2)


(3)


(4)

42 The map below shows the bend of a large meandering stream. The arrows show the direction of stream flow. Letters *A*, *B*, and *C* are positions on the streambed where erosion and deposition data were collected.



Which table best represents the locations where erosion and deposition are dominant and where an equilibrium exists between the two processes? [A check mark (✓) represents the dominant process for each lettered location.]

?

	Erosion	Equilibrium	Deposition
A		✓	
B			✓
C	✓		

(1)

	Erosion	Equilibrium	Deposition
A	✓		
B		✓	
C			✓

(3)

	Erosion	Equilibrium	Deposition
A			✓
B	✓		
C		✓	

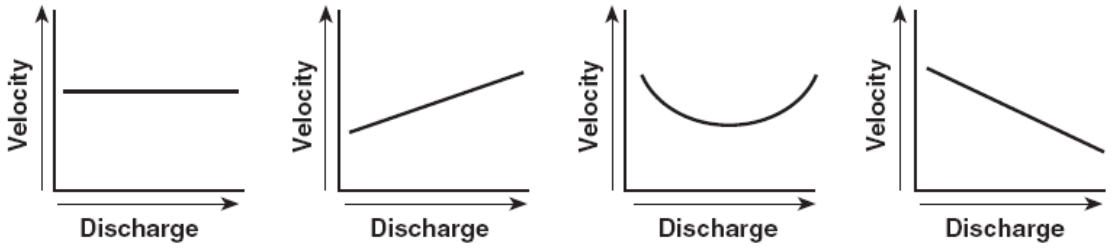
(2)

	Erosion	Equilibrium	Deposition
A			✓
B		✓	
C	✓		

(4)

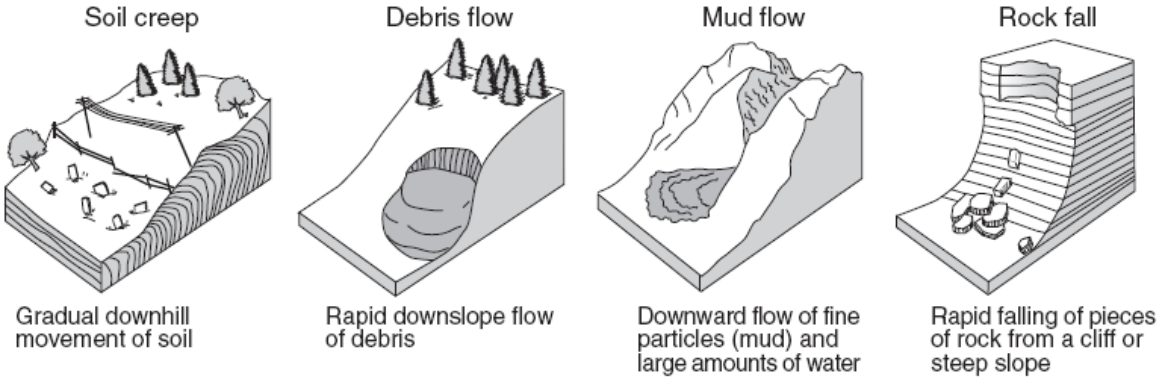
43 Which graph best represents the relationship between the discharge of a stream and the velocity of stream flow?

?



44 The diagrams below represent four different examples of one process that transports sediments.

?

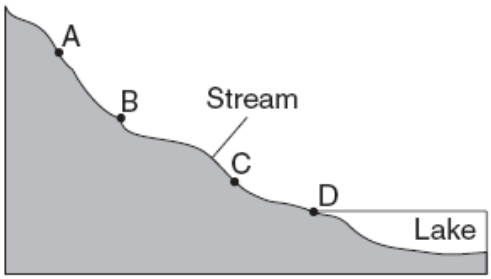


Which process is shown in these diagrams?

(1) chemical weathering
(2) wind action
(3) mass movement
(4) rock abrasion

45 The cross section below shows a stream flowing downhill. Points *A* through *D* are locations in the stream.

?



At which point would most deposition occur?

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

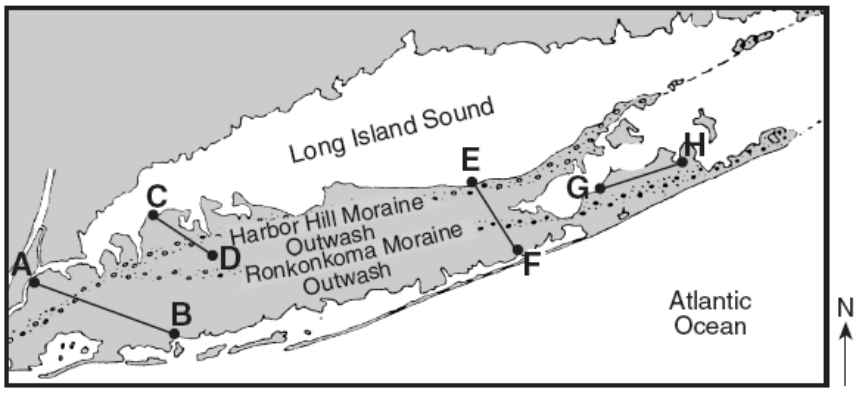
46 A stream flowing at a velocity of 250 centimeters per second is transporting sediment particles ranging in size from clay to cobbles. Which transported particles will be deposited by the stream if its velocity decreases to 100 centimeters per second?

?

(1) cobbles, only
(2) cobbles and some pebbles, only
(3) cobbles, pebbles, and some sand, only
(4) cobbles, pebbles, sand, silt, and clay

Base your answers to questions 47 through 49 on the map of Long Island, New York. *AB*, *CD*, *EF*, and *GH* are reference lines on the map.

Map



?

47 Which agent of erosion transported the sediments that formed the moraines shown on the map?

(1) water (3) ice
(2) wind (4) mass movement

The cross section below represents the sediments beneath the land surface along one of the reference lines shown on the map.

48 Along which reference line was the cross section taken?

?

(1) *AB* (3) *EF*
(2) *CD* (4) *GH*

49 A major difference between sediments in the outwash and sediments in the moraines is that the sediments deposited in the outwash are

?

(1) larger (3) more angular
(2) sorted (4) older

50 The largest particles that a stream deposits as it enters a pond are 8 centimeters in diameter. The minimum velocity of the stream is approximately

?

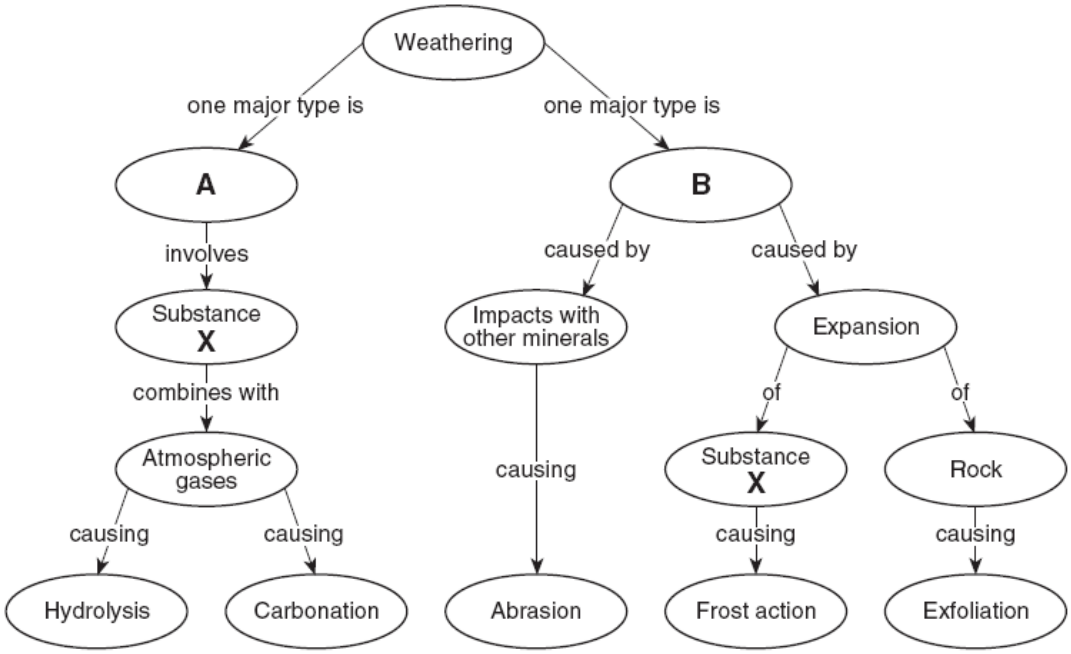
(1) 100 cm/sec (3) 300 cm/sec
(2) 200 cm/sec (4) 400 cm/sec

51 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

Base your answers to questions 52 through 54 on the flowchart below, which shows a general overview of the processes and substances involved in the weathering of rocks at Earth's surface. Letter *X* represents an important substance involved in both major types of weathering, labeled *A* and *B* on the flowchart. Some weathering processes are defined below the flowchart.



Definitions
Frost action – the breakup of rocks caused by the expansion of substance **X**
Abrasion – the wearing down of rocks or particles as they rub or bounce against other rocks
Exfoliation – the peeling away of large sheets of loosened material at the surface of a rock
Hydrolysis – the change in a material caused by contact with substance **X**
Carbonation – the change in a material caused by contact with carbonic acid

52 Which term best identifies the type of weathering represented by *A*?

?

(1) physical
(2) biological
(3) chemical
(4) glacial

53 Which substance is represented by *X* on both sides of the flowchart?

?

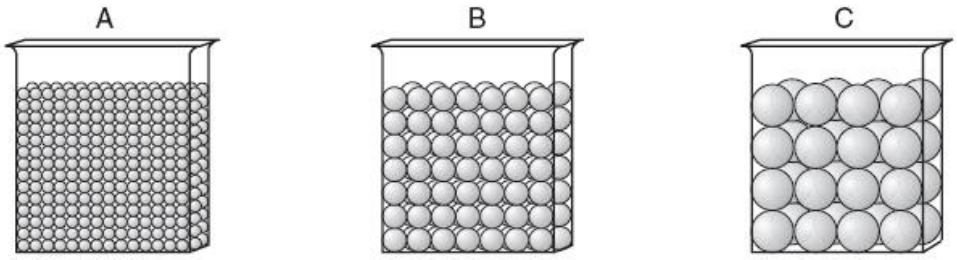
(1) potassium feldspar
(2) air
(3) hydrochloric acid
(4) water

54 Which weathering process is most common in a hot, dry environment?

?

(1) abrasion
(2) carbonation
(3) frost action
(4) hydrolysis

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.



(Not drawn to scale)

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

?

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

(1)

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

(3)

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

(2)

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

(4)

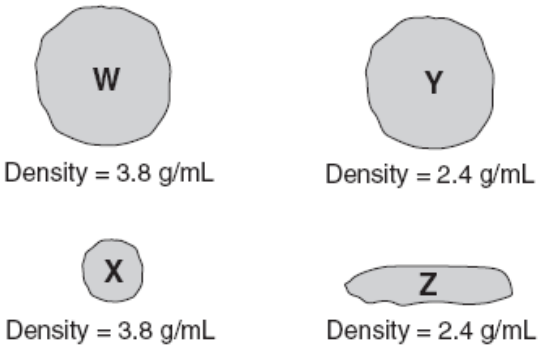
The map below shows the large delta that formed as the Mississippi River emptied into the Gulf of Mexico.

56 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

A stream is transporting the particles *W*, *X*, *Y*, and *Z*, shown below.



57 Which particle will most likely settle to the bottom first as the velocity of this stream decreases?

(1) *W*
(2) *X*
(3) *Y*
(4) *Z*

?

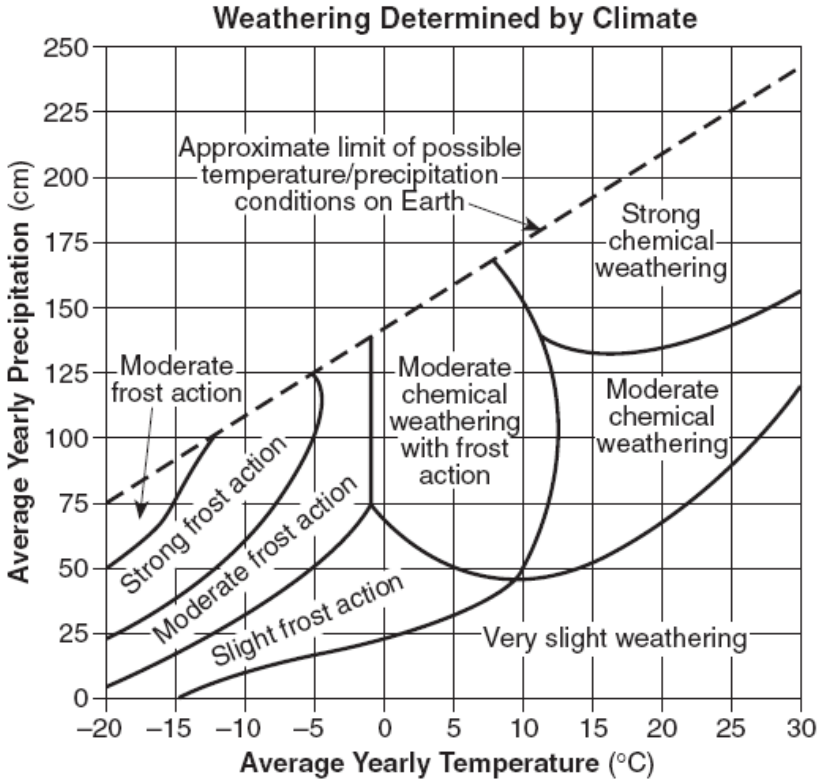
58 New York State's Catskills are classified as which type of landscape region?

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

59 The Catskills landscape region is classified as a plateau primarily because the region has

(1) V-shaped valleys
(2) jagged hilltops
(3) horizontal bedrock structure
(4) folded metamorphic rock

Base your answers to questions 60 and 61 on the graph below, which shows the effect that average yearly precipitation and temperature have on the type of weathering that will occur in a particular region.



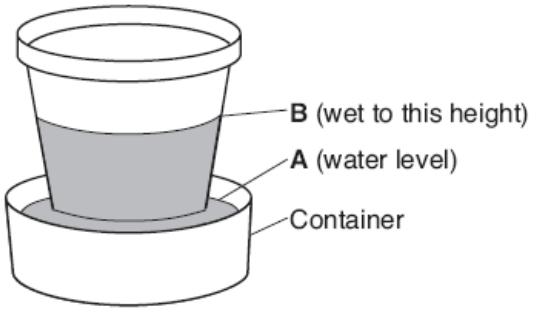
60 Which type of weathering is most common where the average yearly temperature is 5°C and the average yearly precipitation is 45 cm?

(1) moderate chemical weathering
(2) very slight weathering
(3) moderate chemical weathering with frost action
(4) slight frost action

61 The amount of chemical weathering will increase if

(1) air temperature decreases and precipitation decreases
(2) air temperature decreases and precipitation increases
(3) air temperature increases and precipitation decreases
(4) air temperature increases and precipitation increases

62 The diagram below shows the result of leaving an empty, dry clay flowerpot in a full container of water for a period of time. The water level in the container dropped to level *A*. The top of the wet area moved to level *B*.



Level *B* is higher than level *A* because water
(1) is less dense than the clay pot
(2) is more dense than the clay pot
(3) traveled upward in the clay pot by capillary action
(4) traveled downward in the clay pot by capillary action

63 Which property would best distinguish sediment deposited by a river from sediment deposited by a glacier?

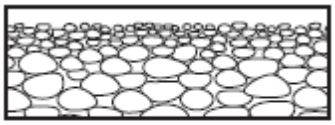
(1) mineral composition of the sediment
(2) amount of sediment sorting
(3) thickness of sediment layers
(4) age of fossils found in the sediment

64 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

65 The cross section below shows a profile of a sediment deposit.

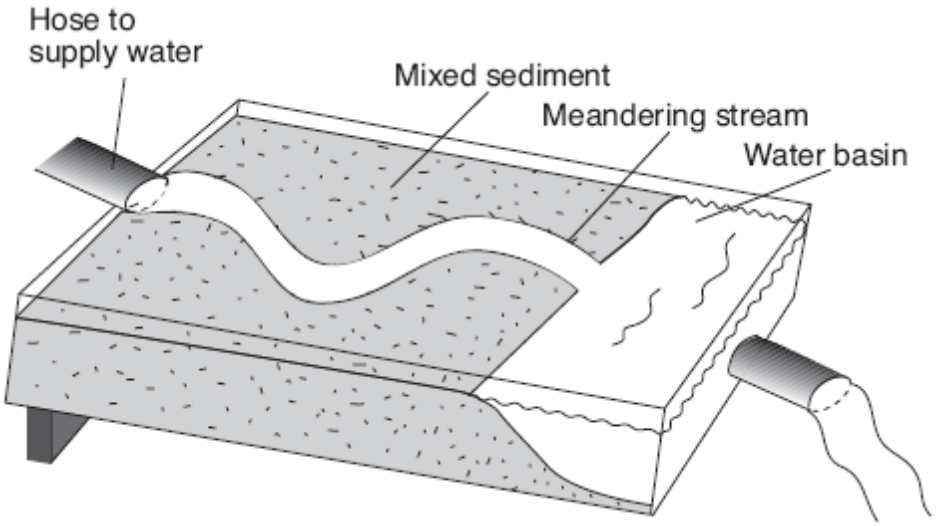


(Drawn to scale)

The pattern of sediment size shown indicates that these sediments were most likely deposited within a

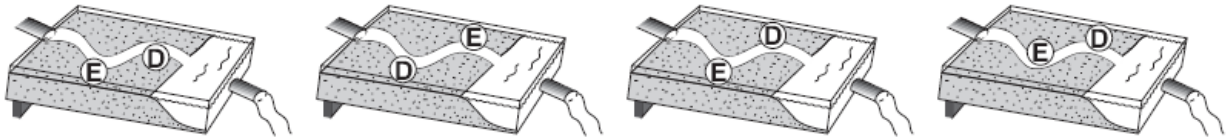
(1) landslide
(2) drumlin
(3) moraine
(4) delta

Base your answers to questions 66 through 68 on the diagram below, which shows a model used to investigate the erosional-depositional system of a stream. The model was tilted to create a gentle slope, and a hose supplied water to form the meandering stream shown.



66 Which diagram best represents where erosion, *E*, and deposition, *D*, are most likely occurring along the curves of the meandering stream?

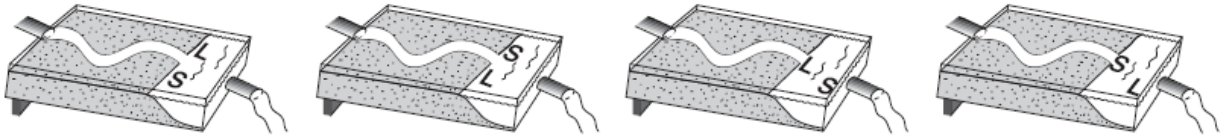
?



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

67 Which diagram best represents the arrangement of large, *L*, and small, *S*, sediment deposited as the stream enters the water basin?

?



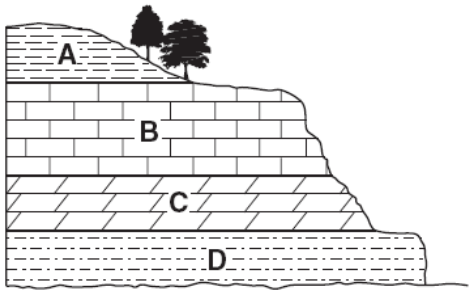
(1) (2) (3) (4)

68 How can the model be changed to increase the amount of sediment transported by the stream?

?

(1) decrease the temperature of the sediment
(2) decrease the slope
(3) increase the size of the sediment
(4) increase the rate of the water flow

69 The cross section below shows sedimentary bedrock layers *A*, *B*, *C*, and *D* exposed at Earth's surface.



?

Which layer appears to be the *least* resistant to weathering?

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

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

?

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

71 Which surface soil type has the *slowest* permeability rate and is most likely to produce flooding?

?

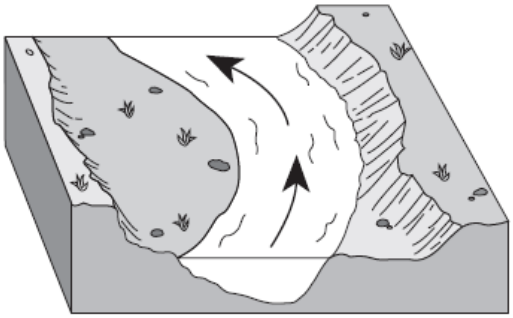
(1) pebbles (3) silt
(2) sand (4) clay

72 A stream flowing at a velocity of 75 centimeters per second can transport

?

(1) clay, only
(2) pebbles, only
(3) pebbles, sand, silt, and clay, only
(4) boulders, cobbles, pebbles, sand, silt, and clay

73 The diagram below shows a section of a meander in a stream. The arrows show the direction of stream flow.



The stream bank on the outside of this meander is steeper than the stream bank on the inside of this meander because the water on the outside of this meander is moving

(1) slower, causing deposition
(2) faster, causing deposition
(3) slower, causing erosion
(4) faster, causing erosion

?

74 Which agent of erosion is mainly responsible for the formation of the depressions occupied by both the kettle lakes and finger lakes found in New York State?

(1) wind (3) streams
(2) waves (4) glaciers

?

75 New York State landscape regions are identified and classified primarily by their

(1) surface topography and bedrock structure
(2) existing vegetation and type of weather
(3) latitude and longitude
(4) chemical weathering rate and nearness to large bodies of water

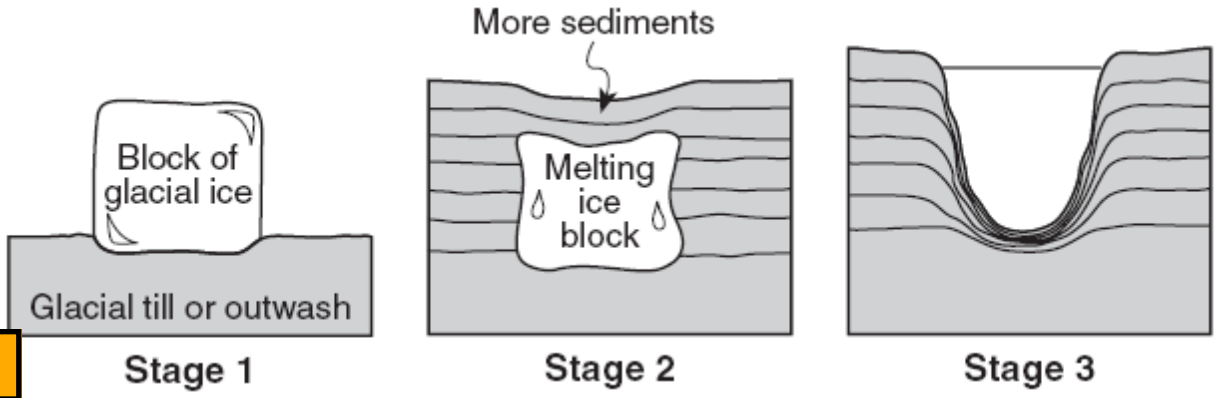
?

76 What will be the most probable arrangement of rock particles deposited directly by a glacier?

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

?

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

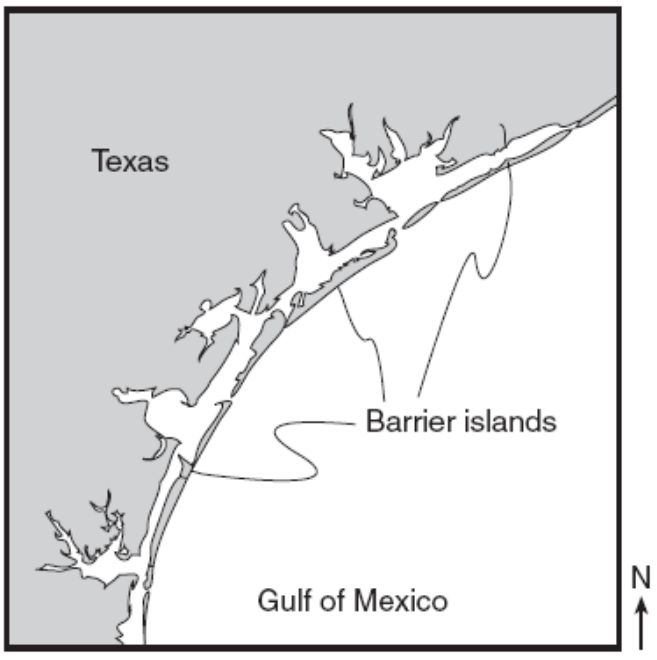


?

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

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

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

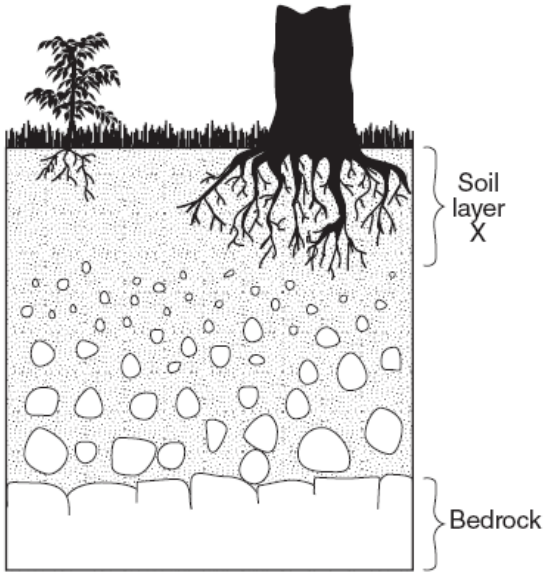


?

Which agent of erosion most likely formed these barrier islands?

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

79 The cross section below shows soil layer *X*, which was formed from underlying bedrock.

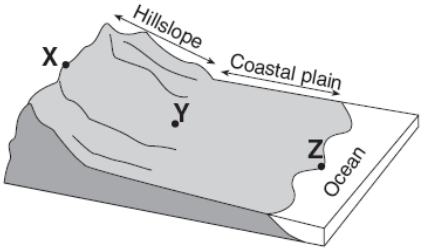


Which change would most likely cause soil layer *X* to increase in thickness?

?

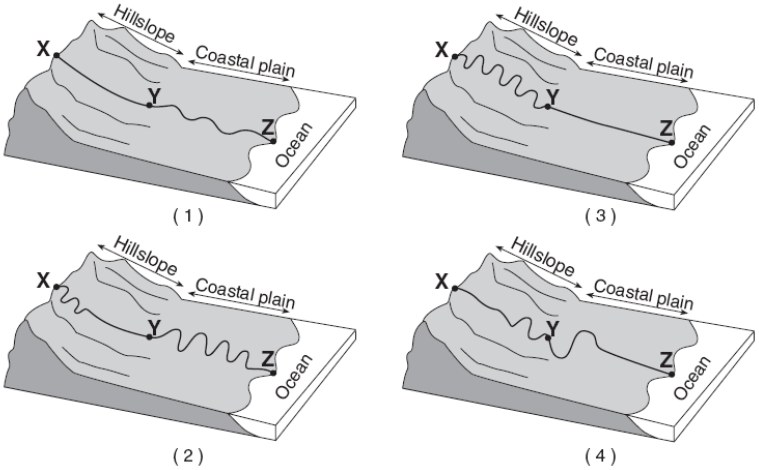
(1) a decrease in slope
(2) a decrease in rainfall
(3) an increase in biologic activity
(4) an increase in air pressure

Base your answers to questions 80 through 82 on the diagram below, which shows a coastal region in which the land slopes toward the ocean. Point *X* is near the top of the hill, point *Y* is at the base of the hill, and point *Z* is a location at sea level. The same type of surface bedrock underlies this entire region. A stream flows from point *X* through point *Y* to point *Z*. This stream is not shown in the diagram.



80 Which diagram best shows the most probable path of the stream flowing from point *X* to point *Z*?

?



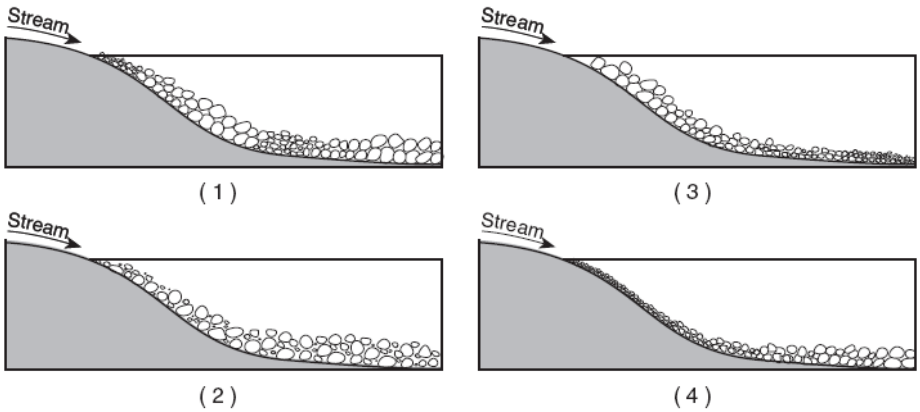
?

81 Compared to the stream velocity between point *X* and point *Y*, the stream velocity between point *Y* and point *Z* is most likely

(1) greater, since the slope of the land decreases
(2) greater, since the slope of the land increases
(3) less, since the slope of the land decreases
(4) less, since the slope of the land increases

82 Which cross section best shows the pattern of sediments deposited by the stream as it enters the ocean near point *Z*?

?



?

83 Which event is the best example of erosion?

(1) breaking apart of shale as a result of water freezing in a crack
(2) dissolving of rock particles on a limestone gravestone by acid rain
(3) rolling of a pebble along the bottom of a stream
(4) crumbling of bedrock in one area to form soil

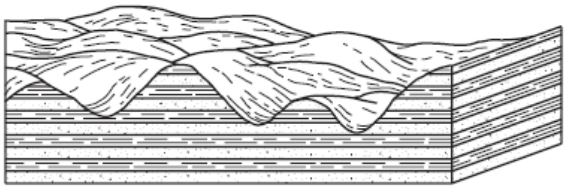
84 Which set of surface soil conditions on a hillside would result in the most infiltration of rainfall?

?

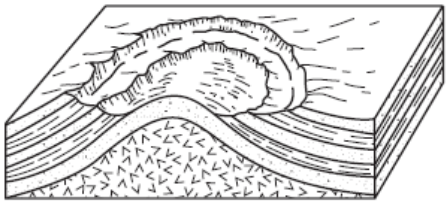
(1) gentle slope, saturated soil, no vegetation
(2) gentle slope, unsaturated soil, vegetation
(3) steep slope, saturated soil, vegetation
(4) steep slope, unsaturated soil, no vegetation

85 Which block diagram best represents a portion of a plateau?

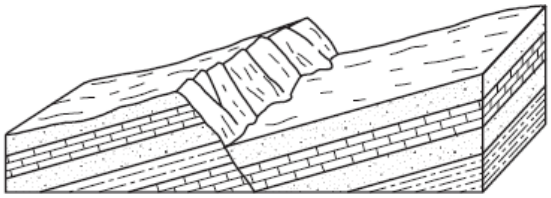
?



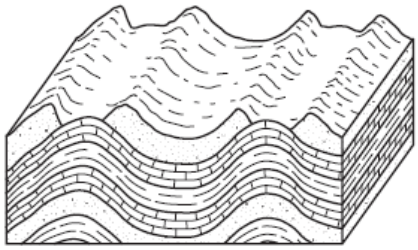
(1)



(3)

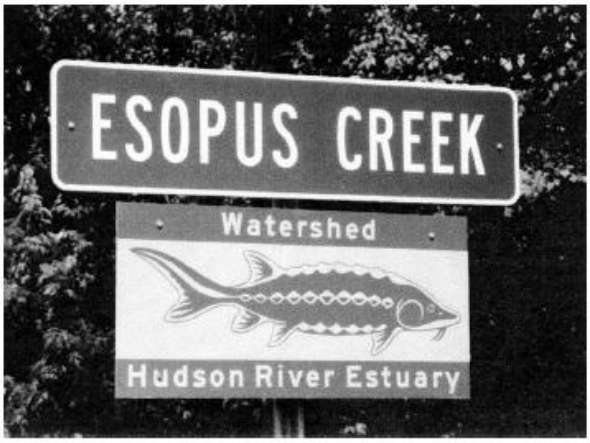


(2)



(4)

86 The photograph below shows a sign near the Esopus Creek in Kingston, New York.



?

The main purpose of the word "watershed" on this sign is to communicate that the Esopus Creek
(1) is a tributary of the Hudson River
(2) is a flood hazard where it flows into the Hudson River
(3) forms a delta in the Hudson River
(4) contains ancient fish fossils

Base your answers to questions 87and 88 on the diagrams below. Diagrams *A*, *B*, and *C* represent three different river valleys.

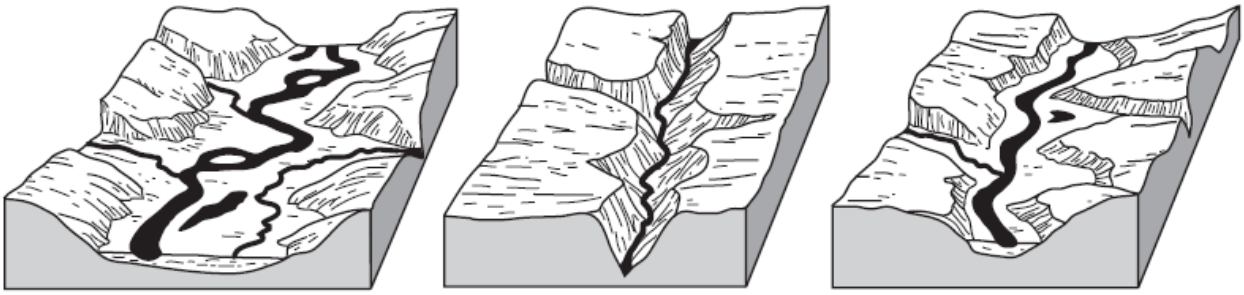
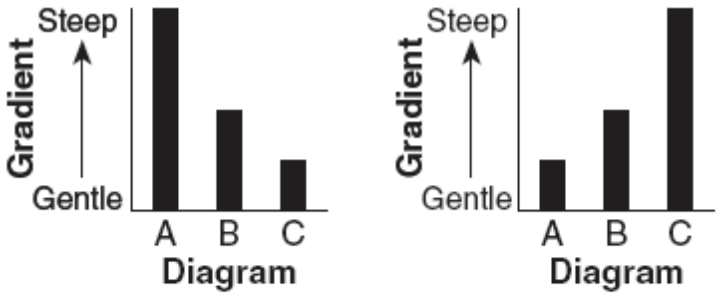


Diagram A Diagram B Diagram C

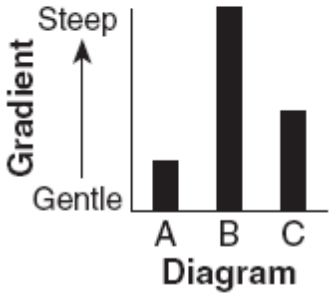
87 Which bar graph best represents the relative gradients of the main rivers shown in diagrams *A*, *B*, and *C*?

?

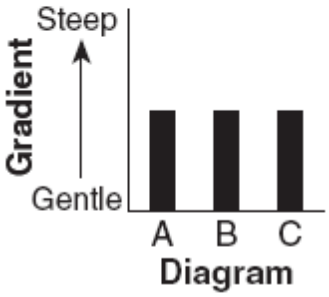


(1)

(3)



(2)



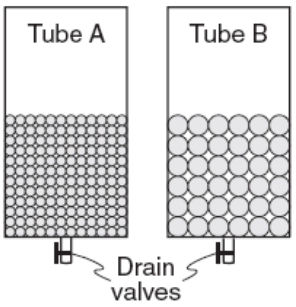
(4)

?

88 Most sediments found on the floodplain shown in diagram *A* are likely to be

(1) angular and weathered from underlying bedrock
(2) angular and weathered from bedrock upstream
(3) rounded and weathered from underlying bedrock
(4) rounded and weathered from bedrock upstream

The diagram below shows tubes *A* and *B* partly filled with equal volumes of round plastic beads of uniform size. The beads in tube *A* are smaller than the beads in tube *B*. Water was placed in tube *A* until the pore spaces were filled. The drain valve was then opened, and the amount of time for the water to drain from the tube was recorded. The amount of water that remained around the beads was then calculated and recorded. Data table 1 shows the measurements recorded using tube *A*.



Data Table 1: Tube A	
water required to fill pore spaces	124 mL
time required for draining	2.1 sec
water that remained around the beads after draining	36 mL

89 If the same procedure was followed with tube *B*, which data table shows the measurements most likely recorded?

?

Data Table 2: Tube B	
water required to fill pore spaces	124 mL
time required for draining	1.4 sec
water that remained around the beads after draining	26 mL

(1)

Data Table 2: Tube B	
water required to fill pore spaces	124 mL
time required for draining	3.2 sec
water that remained around the beads after draining	36 mL

(3)

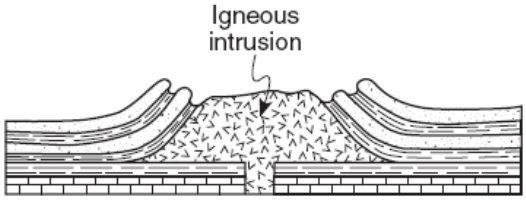
Data Table 2: Tube B	
water required to fill pore spaces	168 mL
time required for draining	3.2 sec
water that remained around the beads after draining	46 mL

(2)

Data Table 2: Tube B	
water required to fill pore spaces	168 mL
time required for draining	1.4 sec
water that remained around the beads after draining	36 mL

(4)

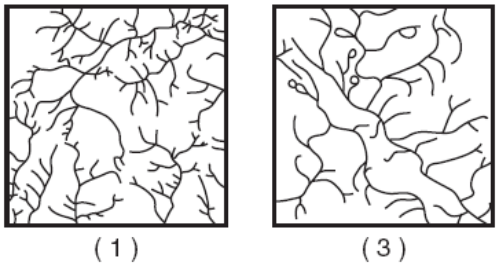
90 The cross section below shows the rock structure of a deeply eroded, domed mountain region.



(Not drawn to scale)

Which map shows the stream drainage pattern that will most likely develop as the bedrock is weathered and eroded from this igneous dome?

?



(1) (3)

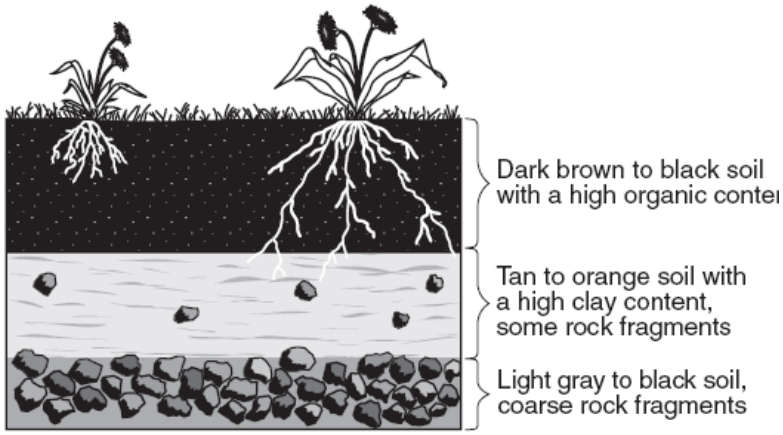
(2) (4)

91 Which sequence shows the order in which landscape regions are crossed as an airplane flies in a straight course from Albany, New York, to Massena, New York?

?

(1) plateau □ plain □ mountain
(2) plateau □ mountain □ plain
(3) plain □ mountain □ plain
(4) mountain □ plain □ plateau

92 The cross section below shows layers of soil.

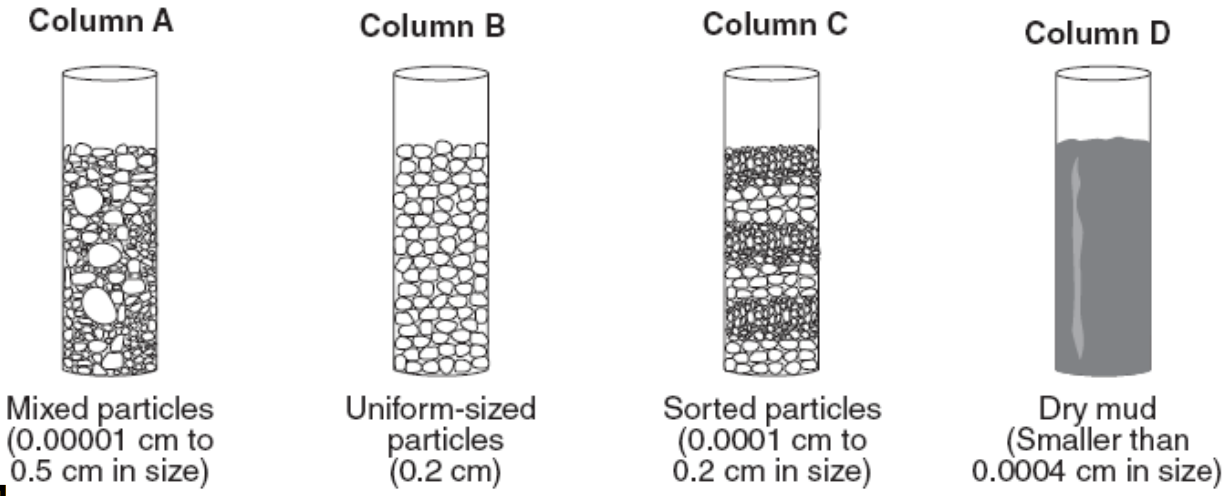


Which two processes produced the layer of dark brown to black soil?

?

(1) melting and solidification of magma
(2) erosion and uplifting
(3) weathering and biologic activity
(4) compaction and cementation

92 The columns *A*, *B*, *C*, and *D* shown below contain equal volumes of sediment.

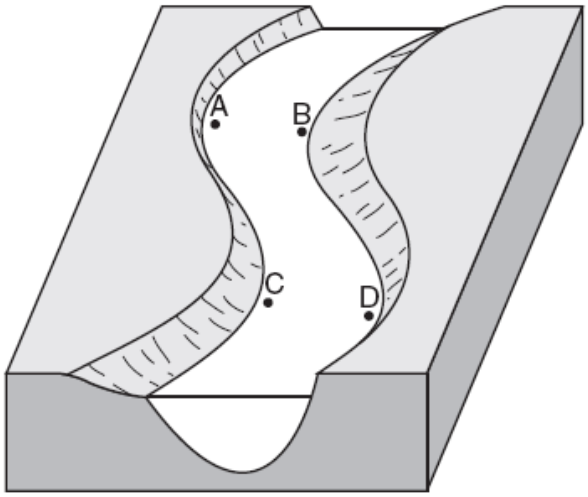


?

When an equal volume of water is added to each column, the greatest rate of infiltration will occur in which column?

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

Base your answers to questions 93 through 95 on the diagram below, which shows a meandering stream. Letters *A*, *B*, *C*, and *D* indicate locations on the streambed.



93 At which two locations is the rate of erosion greater than the rate of deposition?

?

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

94 What are the largest particles that this stream can transport when its velocity is 200 centimeters per second?

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

?

95 A decrease in the velocity of this stream will most likely cause an increase in

?

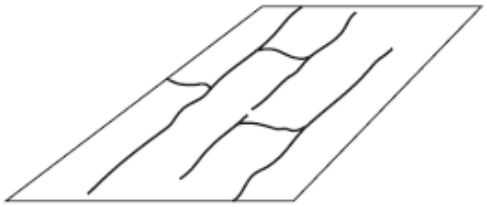
(1) the amount of sediment carried by the stream
(2) the size of the particles carried by the stream
(3) deposition within the stream channel
(4) abrasion of the stream channel

?

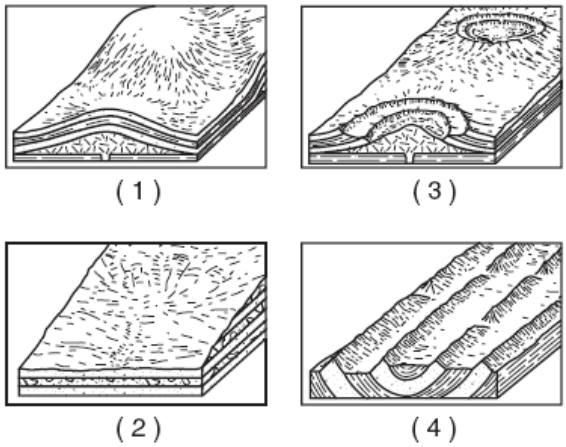
96 Landscapes with horizontal bedrock structure, steep slopes, and high elevations are classified as
(1) plateau regions (3) lowland regions
(2) plain regions (4) mountain regions

?

97 The diagram below represents a map view of a stream drainage pattern.



Which underlying bedrock structure most likely produced this stream drainage pattern?



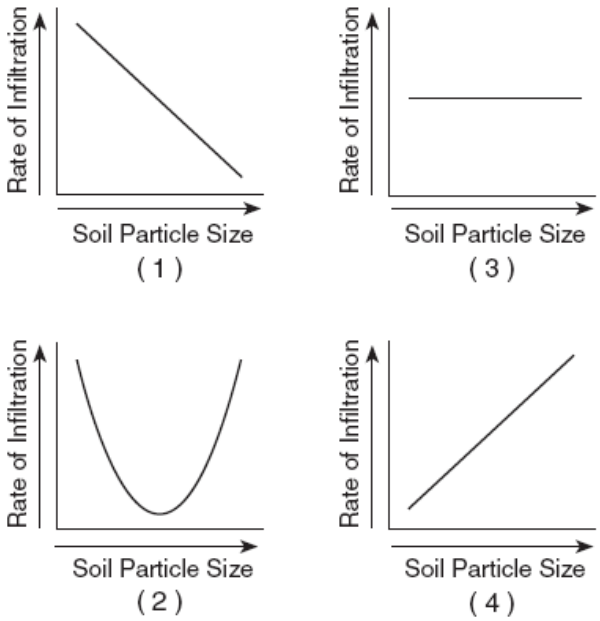
98 Which surface soil conditions allow the most infiltration of rainwater?

?

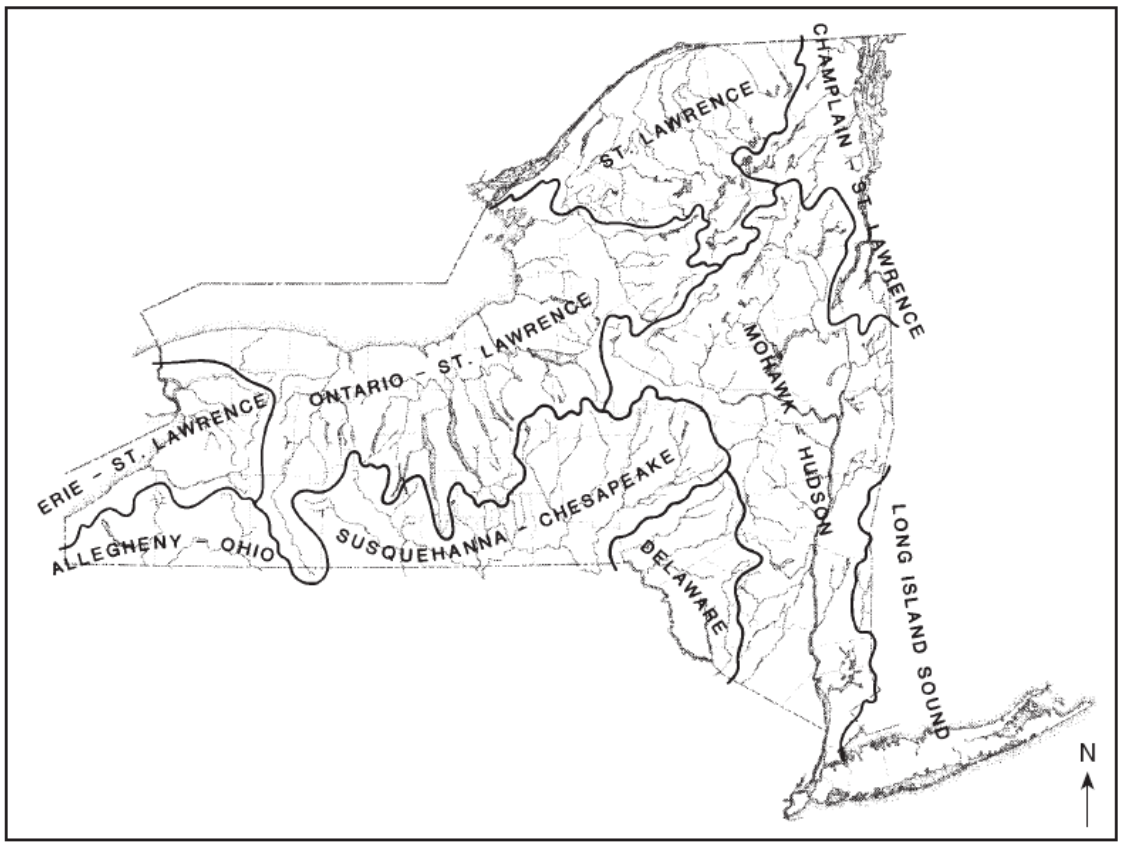
(1) steep slope and permeable soil
(2) steep slope and impermeable soil
(3) gentle slope and permeable soil
(4) gentle slope and impermeable soil

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

?



Base your answers to questions 100 through 103 on the map below, which shows watershed regions of New York State.



100 On which type of landscape region are both the Susquehanna-Chesapeake and the Delaware watersheds located?

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

101 In which watershed is the Genesee River located?

(1) Ontario-St. Lawrence (3) Mohawk-Hudson
(2) Susquehanna-Chesapeake (4) Delaware

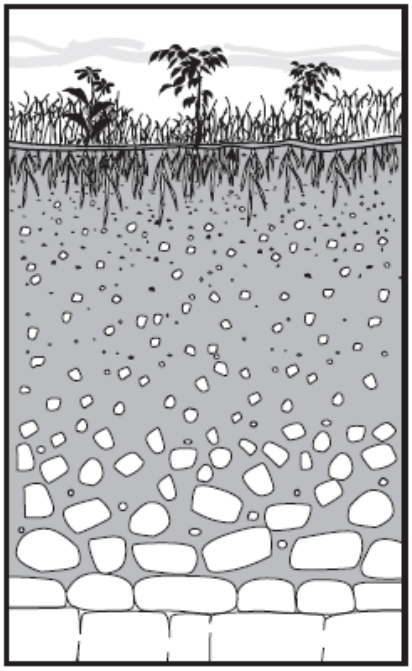
102 Most of the surface bedrock of the Ontario-St. Lawrence watershed was formed during which geologic time periods?

(1) Precambrian and Cambrian
(2) Ordovician, Silurian, and Devonian
(3) Mississippian, Pennsylvanian, and Permian
(4) Triassic, Jurassic, and Cretaceous

103 Outwash plains are formed as a result of deposition by

(1) landslides
(2) ocean waves
(3) winds from hurricanes
(4) meltwater from glaciers

104 The cross section below shows a soil profile.

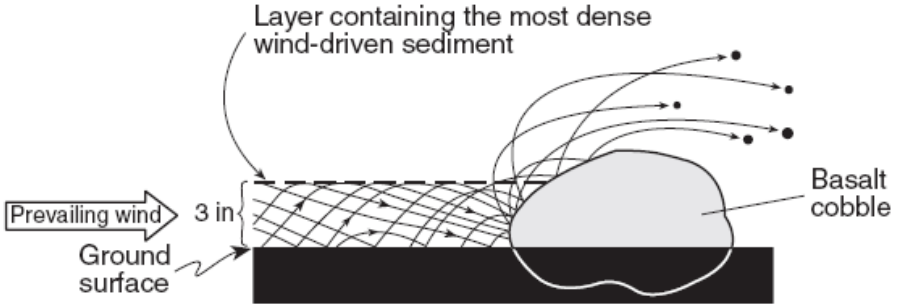


?

This soil was formed primarily by

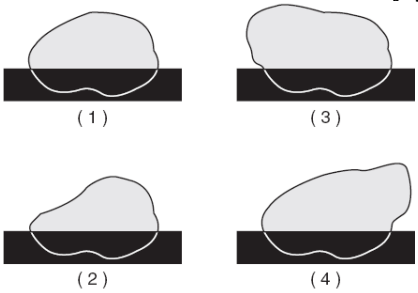
(1) erosion by glaciers
(2) erosion by running water
(3) capillarity and human activity
(4) weathering and biological activity

105 The cross section below shows the movement of wind-driven sand particles that strike a partly exposed basalt cobble located at the surface of a windy desert.

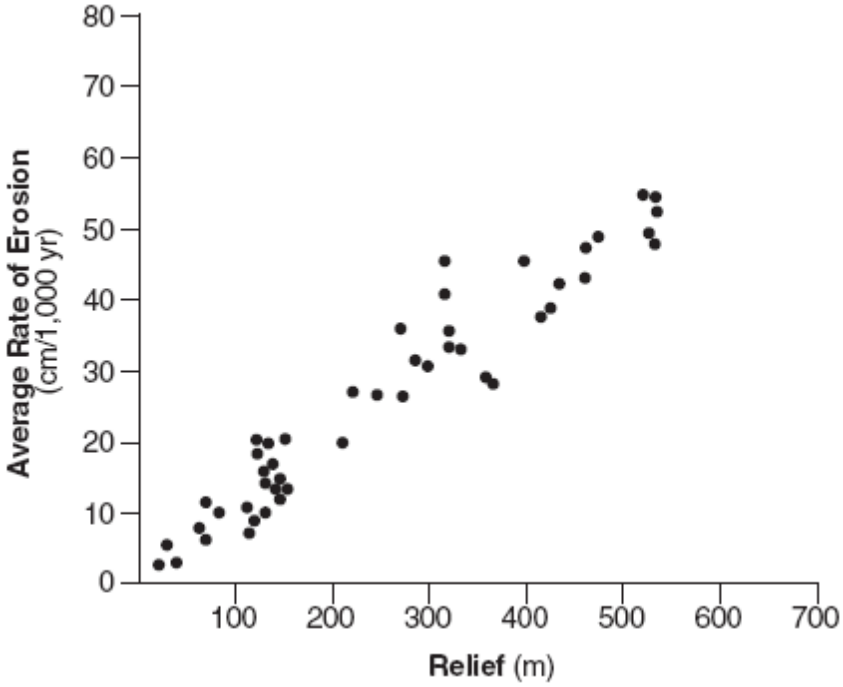


?

Which cross section best represents the appearance of this cobble after many years of exposure to the wind-driven sand?



106 Each dot on the graph below shows the result of separate scientific studies of the relationship between the rates of erosion in regions of different relief. Relief is the local difference between the highest and the lowest elevations.



The results of these combined studies indicate that with each 100-meter increase in relief, the rate of erosion generally

?

(1) decreases at a rate of 10 cm/1,000 years
(2) decreases at a rate of 20 cm/1,000 years
(3) increases at a rate of 10 cm/1,000 years
(4) increases at a rate of 20 cm/1,000 years

Base your answers to questions 107 through 109 on the map below, which shows the drainage basin of the Mississippi River system. Several rivers that flow into the Mississippi River are labeled. The arrow at location *X* shows where the Mississippi River enters the Gulf of Mexico.

107 The entire land area drained by the Mississippi River system is referred to as a
(1) levee (3) meander belt
(2) watershed (4) floodplain

108 Sediments deposited at location *X* by the Missisippi River most likely have which characteristics?
(1) angular fragments arranged as mixtures
(2) rock particles arranged in sorted beds
(3) rocks with parallel scratches and grooves
(4) high-density minerals with hexagonal crystals

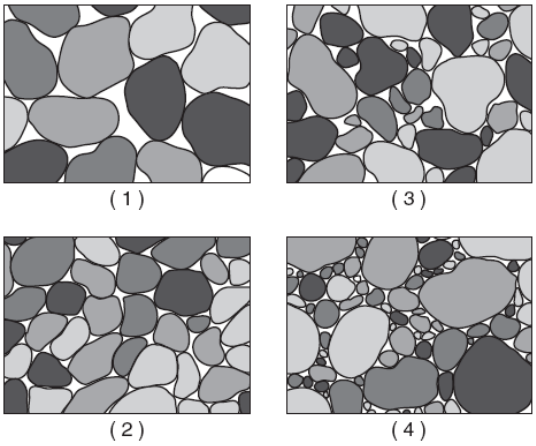
109 The structure formed by the deposition of sediments at location *X* is best described as a
(1) moraine (3) delta
(2) tributary (4) drumlin

110 Which change at a particular location in a stream usually causes more sediments to be deposited at that location?
(1) decrease in stream velocity
(2) decrease in stream width
(3) increase in stream slope
(4) increase in stream discharge

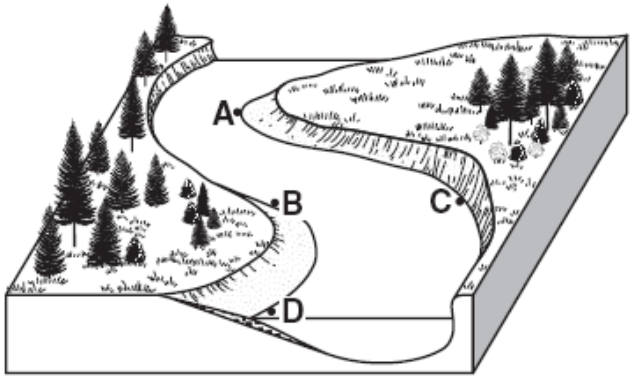
111 During a dry summer, the flow of most large New York State streams generally
(1) continues because some groundwater seeps into the streams
(2) increases due to greater surface runoff
(3) remains unchanged due to transpiration from grasses, shrubs, and trees
(4) stops completely because no water runs off into the streams

112 The diagrams below represent four permeable sediment samples. The sediments are composed of the same material, but differ in particle size and sorting. Which sediment sample will most likely have the fastest groundwater infiltration rate?

?



113 The diagram below shows points *A*, *B*, *C*, and *D* on a meandering stream.

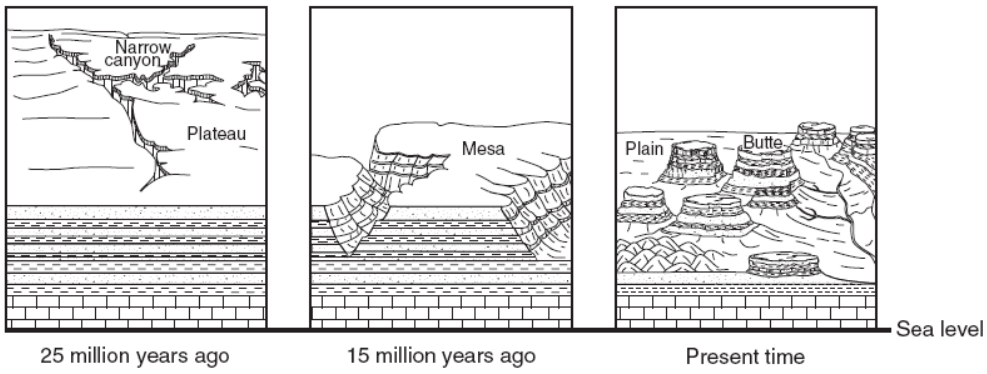


At which point does the greatest stream erosion occur?

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

?

114 The sequence of bedrock cross sections below represents the same landscape region over a period of geologic time.

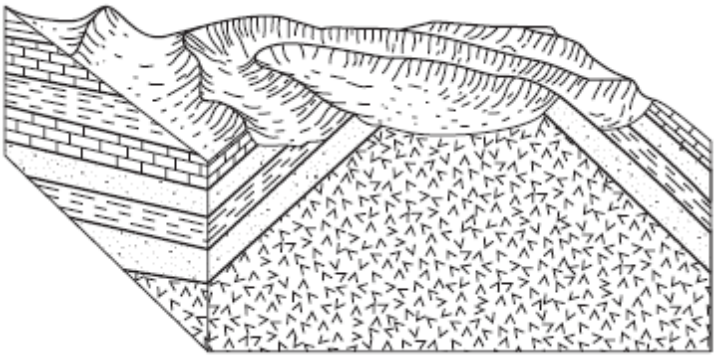


This sequence best represents

?

(1) an arid region that experienced mostly uplifting forces
(2) an arid region that experienced mostly erosional forces
(3) a humid region that experienced mostly uplifting forces
(4) a humid region that experienced mostly erosional forces

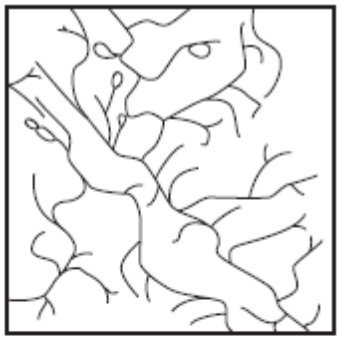
115 The block diagram below represents a deeply eroded dome.



Which map shows the stream drainage pattern that would most likely develop on this deeply eroded dome?

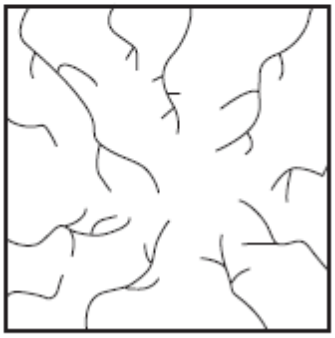
?

(1)



(3)

(2)



(4)

116 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

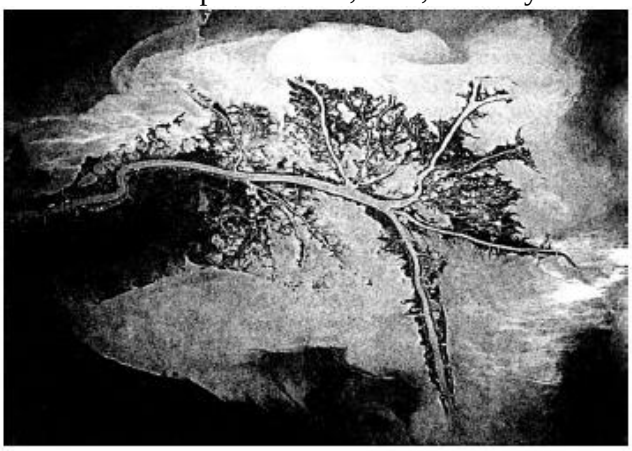
117 Which two New York State landscape regions are formed mostly of surface bedrock that is approximately the same geologic age?

(1) Manhattan Prong and Atlantic Coastal Plain
(2) Erie-Ontario Lowlands and Adirondack Mountains
(3) Adirondack Mountains and Allegheny Plateau
(4) Tug Hill Plateau and St. Lawrence Lowlands

118 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

119 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
(2) wind
(3) wave action
(4) running water

120 The diagram below shows a sedimentary rock sample.

(Shown actual size)

Which agent of erosion was most likely responsible for shaping the particles forming this rock?

(1) mass movement
(2) wind
(3) glacial ice
(4) running water

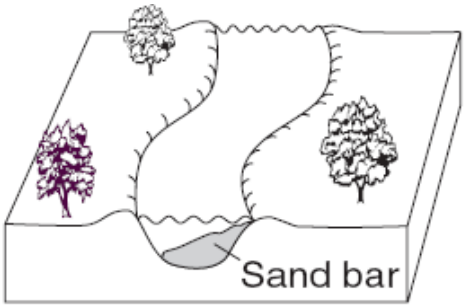
121 The diagrams below show gradual stages 1, 2, and 3 in the development of a river delta where a river enters an ocean.

Stage 1 Stage 2 Stage 3

?

Which statement best explains why the river delta is developing at this site?
(1) The rate of deposition is less than the rate of erosion.
(2) The rate of deposition is greater than the rate of erosion.
(3) Sea level is slowly falling.
(4) Sea level is slowly rising.

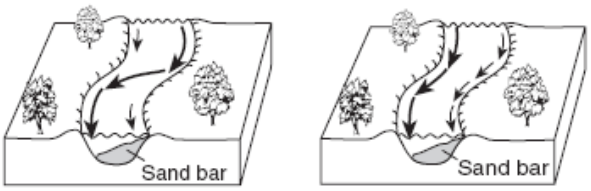
122 The diagram below shows a meandering stream flowing across nearly flat topography and over loose sediments.



?

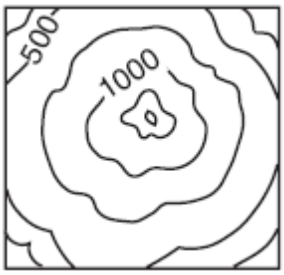
If arrow length represents stream velocity, which diagram best shows the relative stream velocities in this section of the stream?

(1) (3)



(2) (4)

123 The topographic map below shows a particular landscape.



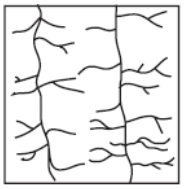
Which map best represents the stream drainage pattern for this landscape?

?

(1)

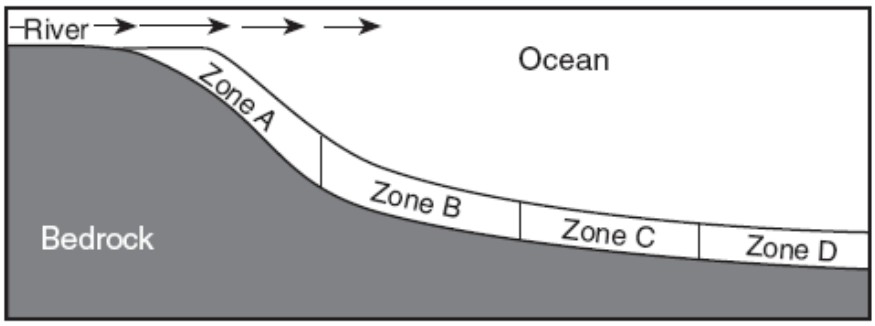
(3)

(2)



(4)

Base your answers to questions 124 and 125 on the cross section and data table shown below. The cross section shows a sediment-laden river flowing into the ocean. The arrows show the direction of river flow. Different zones of sorted sediments, *A*, *B*, *C*, and *D*, have been labeled. Sediments have been taken from these zones and measured. The data table shows the range of sediment sizes in each zone.



Data Table

Zone	Major Sediment Sizes
A	0.04 cm to 6 cm
B	0.006 cm to 0.1 cm
C	0.0004 cm to 0.006 cm
D	Less than 0.0004 cm

124 How is this pattern of horizontal sorting produced

(1) High-density materials generally settle more slowly.
(2) Rounded sediments generally settle more slowly.
(3) Dissolved minerals are generally deposited first.
(4) Bigger particles are generally deposited first.

?

125 What is the minimum rate of flow at which a stream of water can maintain the transportation of pebbles 1.0 centimeter in diameter?

(1) 50 cm/sec
(2) 100 cm/sec
(3) 150 cm/sec
(4) 200 cm/sec

?

126 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

?

127 In which New York State landscape region is Niagara Falls located?

(1)Tug Hill Plateau
(2) St. Lawrence Lowlands
(3) Allegheny Plateau
(4) Erie-Ontario Lowlands

?

128 Which activity demonstrates chemical weathering?

(1) freezing of water in the cracks of a sandstone sidewalk
(2) abrasion of a streambed by tumbling rocks
(3) grinding of talc into a powder
(4) dissolving of limestone by acid rain

?

129 Which set of conditions would produce the most runoff of precipitation?

(1) gentle slope and permeable surface
(2) gentle slope and impermeable surface
(3) steep slope and permeable surface
(4) steep slope and impermeable surface

?

130 The greatest amount of rainwater infiltration occurs on the side of a hill if the surface of a permeable soil has

(1) small soil particles and a steep slope
(2) small soil particles and a gentle slope
(3) large soil particles and a steep slope
(4) large soil particles and a gentle slope

?

131 The meandering streams shown in landscape region *B* usually form where there are

(1) volcanic cones
(2) gentle gradients
(3) many fractures in the bedrock
(4) numerous escarpments

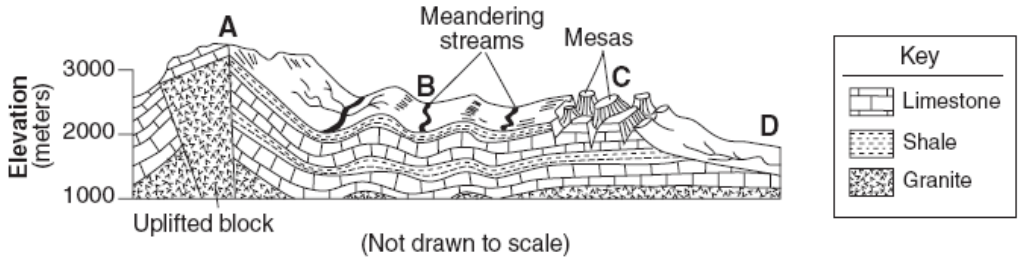
?

132 The sharp, angular flat-topped hills (mesas) in landscape region *C* were most likely produced by a climate that was

(1) tropical
(2) humid
(3) dry
(4) polar

?

Base your answers to question 131 through on the geologic cross section and the table below. The cross section represents the bedrock structure beneath four landscape regions, *A*, *B*, *C*, and *D*.



The table below shows characteristics of the four landscape regions *A*, *B*, *C*, and *D*.

Landscape Region	Relief	Bedrock
A	great relief, high peaks, deep valleys	faulted and tilted structure; many bedrock types, including igneous
B	moderate relief, rounded peaks, wide valleys	folded sedimentary bedrock
C	moderate to high relief	horizontal sedimentary bedrock layers
D	very little relief, low elevations	horizontal sedimentary bedrock layers

131 Which terms best describe the surface landscapes of *A*, *B*, *C*, and *D*?

(1) *A*—mountains, *B*—ridges and valleys, *C*—plateau, *D*—plain

(2) *A*—plateau, *B*—plain, *C*—mountains, *D*—ridges and valleys

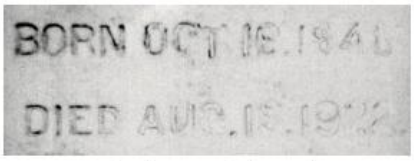
(3) *A*—plain, *B*—mountains, *C*—plateau, *D*—plain

(4) *A*—ridges and valleys, *B*—plateau, *C*—plain, *D*—mountains

132 The diagram below shows a stream flowing past points *X* and *Y*. If the velocity of the stream at point *X* is 100 centimeters per second, which statement best describes the sediments being transported past these points?

(1) At points *X* and *Y*, only clay is being transported.
(2) At points *X* and *Y*, only sand, silt, and clay are being transported.
(3) Some pebbles being transported at point *Y* are bigger than those being transported at point *X*.
(4) Some pebbles and cobbles are being transported at points *X* and *Y*, but not sand, silt, or clay.

133 The two photographs below show dates on tombstones found in a cemetery in St. Remy, New York. The tombstones were 5 meters apart and both faced north. Tombstone *A* had dates cut into the rock in 1922. Tombstone *B* had dates cut into the rock in 1892.



Tombstone A (1922)

Tombstone B (1892)

Which statement best explains why the dates are more difficult to read on tombstone *A* than on tombstone *B*?

?

(1) Tombstone *A* is composed of minerals less resistant to weathering than tombstone *B*.
(2) Tombstone *A* has undergone a longer period of weathering than tombstone *B*.
(3) Tombstone *A* experienced cooler temperatures than tombstone *B*.
(4) Tombstone *A* was exposed to less acid rain than tombstone *B*.

134 Landscapes will undergo the most chemical weathering if the climate is

?

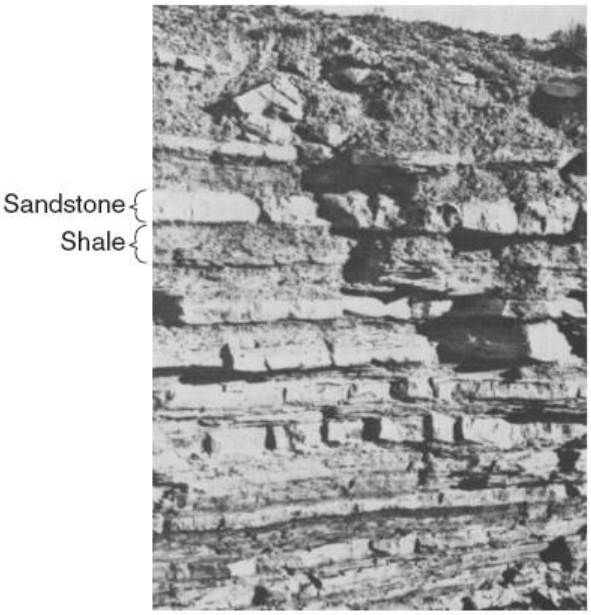
(1) cool and dry
(2) cool and wet
(3) warm and dry
(4) warm and wet

135 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

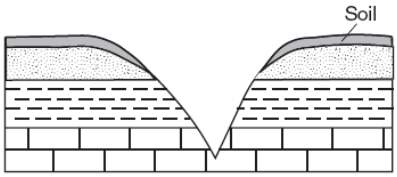
136 The photograph below shows an outcrop of horizontal rock layers in New York State. Rock outcrops like this are most commonly found in which area of New York State?



?

(1) Hudson Highlands
(2) Adirondack Mountains
(3) Atlantic Coastal Plain
(4) Appalachian Plateau

138 The cross section below shows a V-shaped valley and the bedrock beneath the valley.

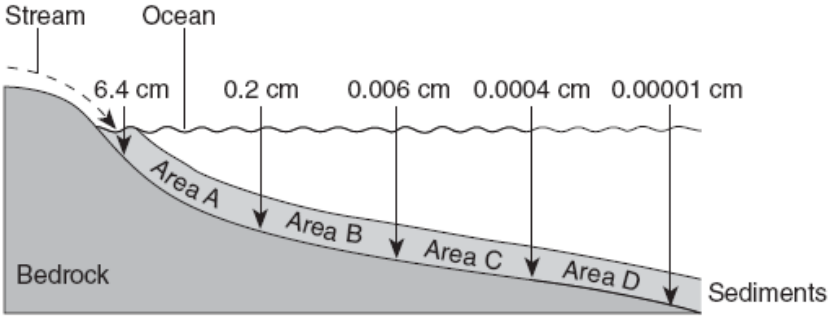


Which agent of erosion is responsible for cutting most V-shaped valleys into bedrock?

?

(1) surface winds
(2) running water
(3) glacial ice
(4) ocean waves

139 The profile below shows the average diameter of sediment that was sorted and deposited in specific areas *A*, *B*, *C*, and *D* by a stream entering an ocean.

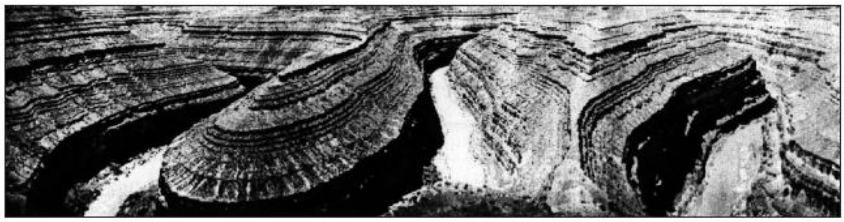


As compaction and cementation of these sediments eventually occur, which area will become siltstone?

?

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

140 The photograph below shows an eroded plateau found in the southwestern United States.

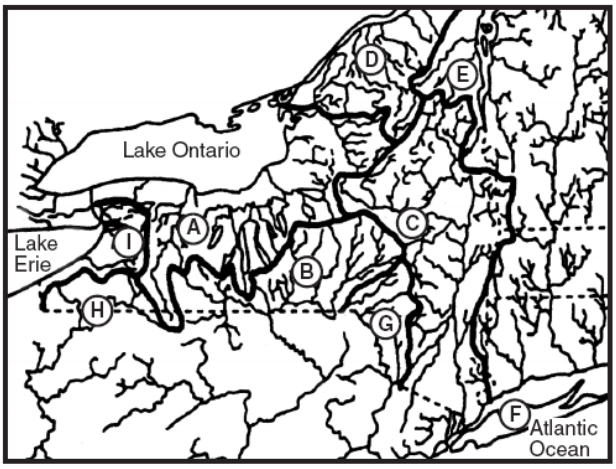


The landscape was developed by the processes of

?

(1) crustal uplift and stream erosion
(2) crustal uplift and glacial erosion
(3) crustal folding and stream erosion
(4) crustal folding and glacial erosion

141 The map below shows major streams in the New York State area. The bold lines mark off sections *A* through *I* within New York State.



The best title for the map would be

?

(1) "Tectonic Plate Boundaries in New York State"
(2) "Bedrock Geology Locations of New York State"
(3) "Landscape Regions of New York State"
(4) "Watershed Areas of New York State"

142 During a heavy rainfall, runoff will be greatest on a soil that has an infiltration (permeability) rate of

(1) 0.1 cm/sec (3) 0.3 cm/sec
(2) 0.2 cm/sec (4) 1.2 cm/sec

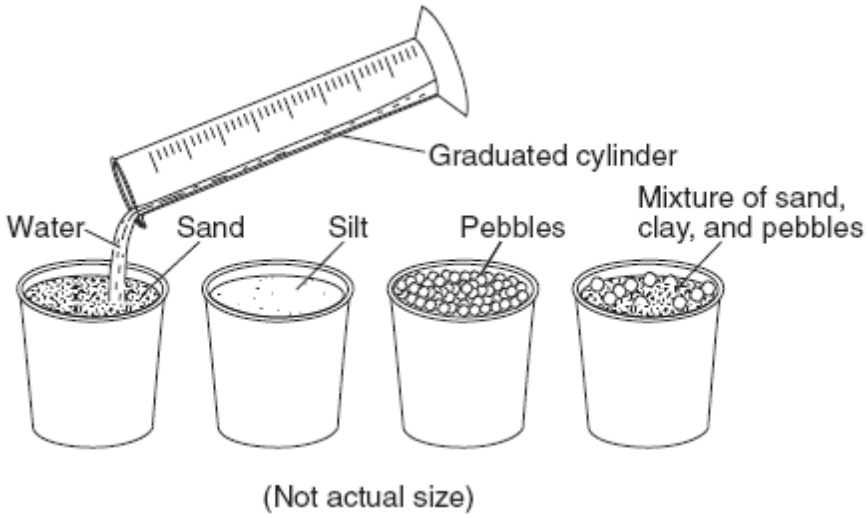
?

143 During a rainfall, surface runoff will probably be greatest in an area that has a

(1) steep slope and a clay-covered surface
(2) steep slope and a gravel-covered surface
(3) gentle slope and a grass-covered surface
(4) gentle slope and a tree-covered surface

?

144 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.



(Not actual size)

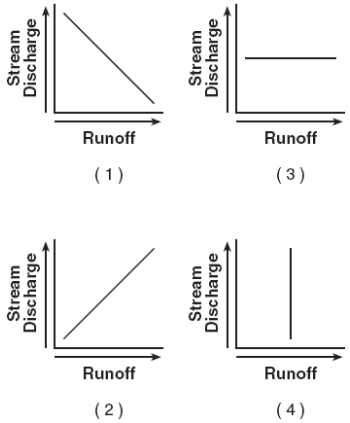
The results of the activity should have indicated that approximately equal amounts of water were added to the cups of

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

?

145 Which graph best represents the relationship between surface-water runoff and stream discharge?

?



146 The long, sandy islands along the south shore of Long Island are composed mostly of sand and rounded pebbles arranged in sorted layers. The agent of erosion that most likely shaped and sorted the sand and pebbles while transporting them to their island location was

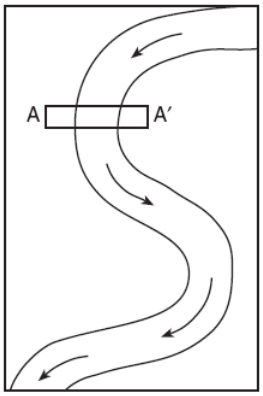
(1) glaciers (3) wind
(2) landslides (4) ocean waves

?

147 An environmental scientist needs to prepare a report on the potential effects that a proposed surface mine in New York State will have on the watershed where the mine will be located. In which reference materials will the scientist find the most useful data with which to determine the watershed's boundaries?

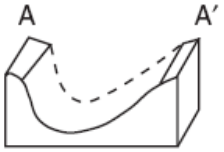
? (1) topographic maps
(2) geologic time scales
(3) tectonic plate maps
(4) planetary wind maps

148 The map below shows a meandering river. *A*–*A*2 is the location of a cross section. The arrows show the direction of the riverflow.

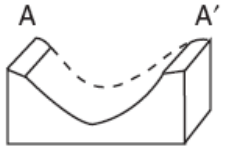


? Which cross section best represents the shape of the river bottom at *A*–*A*2?

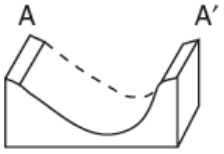
(1)



(3)



(2)



(4)

149 Which river is a tributary branch of the Hudson River?

(1) Delaware River (3) Mohawk River
(2) Susquehanna River (4) Genesee River

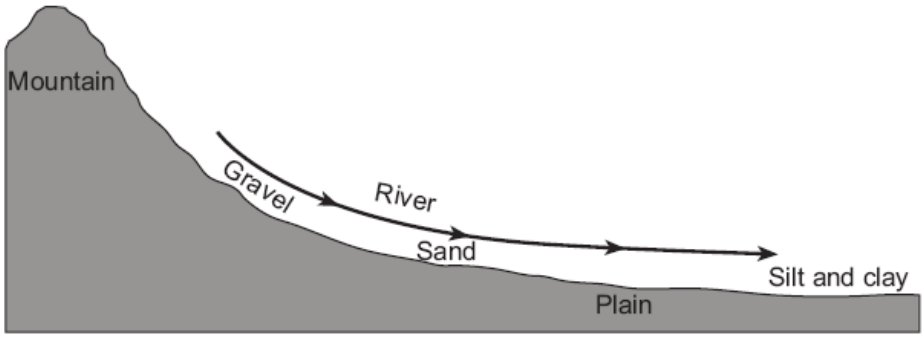
?

150 The cities of Buffalo, New York, and Plattsburgh, New York, are both located in landscape regions called

(1) mountains (3) plateaus
(2) highlands (4) lowlands

?

151 The cross section below illustrates the general sorting of sediment by a river as it flows from a mountain to a plain.



(Not drawn to scale)

?

Which factor most likely caused the sediment to be sorted in the pattern shown?
(1) velocity of the river water
(2) hardness of the surface bedrock
(3) mineral composition of the sediment
(4) temperature of the water

152 What are the largest particles that a stream can transport when its velocity is 200 centimeters per second?

?

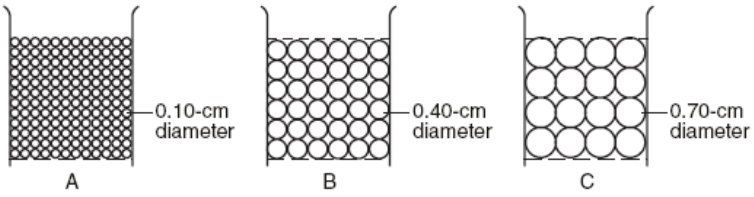
(1) silt (3) pebbles
(2) sand (4) cobbles

153 The occurrence of parallel scratches on bedrock in a U-shaped valley indicates that the area has most likely been eroded by

(1) a glacier (3) waves
(2) a stream (4) wind

?

154 The diagrams below show the relative sizes of particles from soil samples *A*, *B*, and *C*. Equal volumes of each soil sample were placed in separate containers. Each container has a screen at the bottom. Water was poured through each sample to determine the infiltration rate.

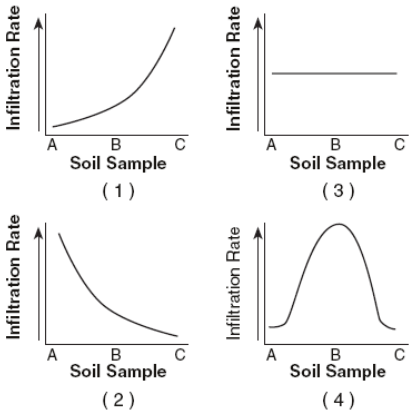


(Not drawn to scale)

A

?

Which graph best shows how the infiltration rates of the three soil samples would compare?



155 Which condition would cause surface runoff to increase in a particular location?

(1) covering a dirt road with pavement
(2) reducing the gradient of a steep hill
(3) planting grasses and shrubs on a hillside
(4) having a decrease in the annual rainfall

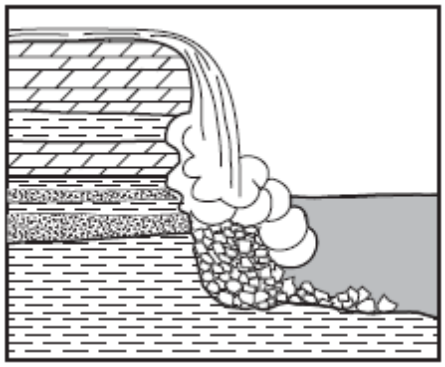
156 The table below shows the rate of erosion and the rate of deposition at four stream locations.

Location	Rate of Erosion (tons/year)	Rate of Deposition (tons/year)
A	3.00	3.25
B	4.00	4.00
C	4.50	4.65
D	5.60	5.20

At what location does a state of dynamic equilibrium exists at location

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

157 The cross section below shows sedimentary rocks being eroded by water at a waterfall.



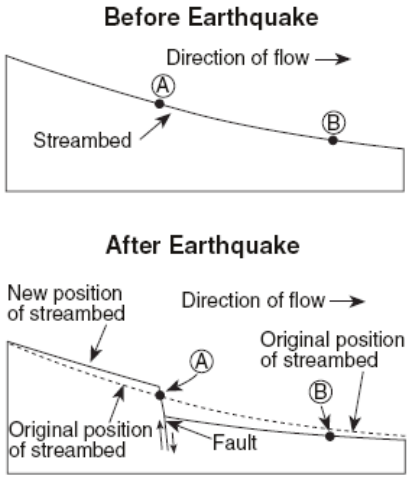
The sedimentary rock layers are being weathered and eroded at different rates primarily because the rock layers

(1) formed during different time periods
(2) contain different fossils
(3) have different compositions
(4) are horizontal

158 A stream with a water velocity of 150 centimeters per second decreases to a velocity of 100 centimeters per second. Which sediment size will most likely be deposited?

(1) pebbles (3) boulders
(2) sand (4) cobbles

159 The diagram below shows a stream profile before and after an earthquake. Points *A* and *B* are locations along the streambed.



What is the probable relationship between erosion and deposition at points *A* and *B* after the earthquake?

(1) There is more deposition at point *A* and more erosion at point *B*.
(2) There is more erosion at point *A* and more deposition at point *B*.
(3) There is more deposition than erosion at points *A* and *B*.
(4) There is more erosion than deposition at points *A* and *B*.

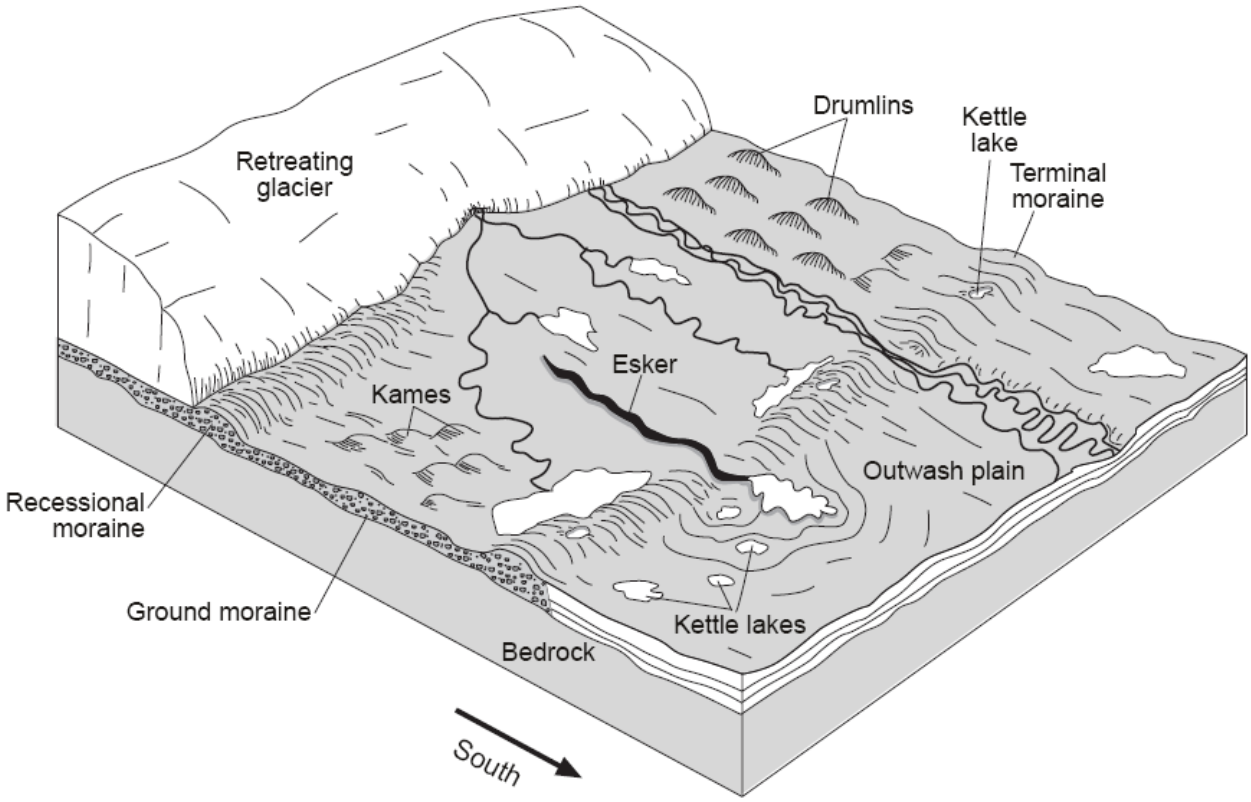
160 Tilted, slightly metamorphosed rock layers are typically found in which New York State landscape region?

(1) Taconic Mountains
(2) Atlantic Coastal Plain
(3) Tug Hill Plateau
(4) Erie-Ontario Lowlands

161 Which factor has the greatest influence on the weathering rate of Earth's surface bedrock?

(1) local air pressure
(2) angle of insolation
(3) age of the bedrock
(4) regional climate

Base your answers to questions 162 through 164 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.



162 During which geologic epoch did this glacier retreat from New York State?

(1) Pleistocene
(2) Eocene
(3) Late Pennsylvanian
(4) Early Mississippian

163 The moraines pictured in the block diagram were deposited directly by the glacier. The sediments within these moraines are most likely

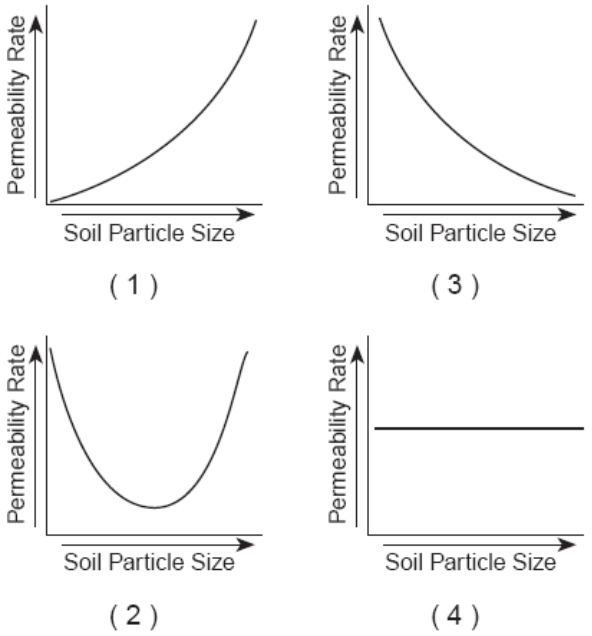
(1) sorted by size and layered
(2) sorted by size and unlayered
(3) unsorted by size and layered
(4) unsorted by size and unlayered

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

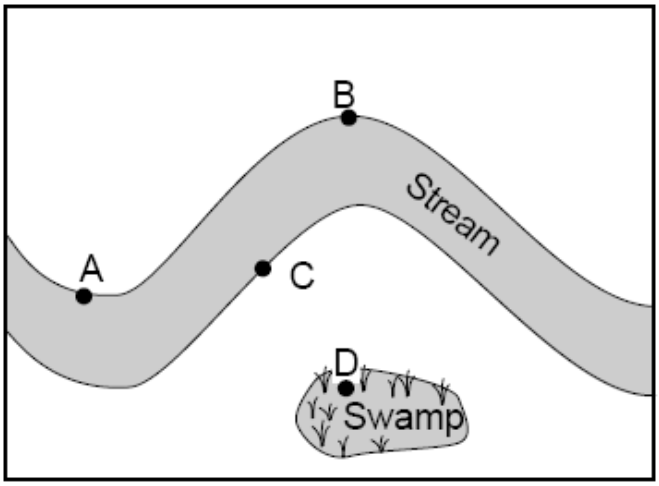
(1) age of the glacier
(2) direction of glacial movement
(3) thickness of the glacial ice
(4) rate of glacial movement

165 Which graph best represents the general relationship between soil particle size and the permeability rate of infiltrating rainwater?

?



166 The map below shows the area surrounding a meandering stream.



At which point is erosion greatest?

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

?

The table below describes the characteristics of three landscape regions, *A*, *B*, and *C*, found in the United States.

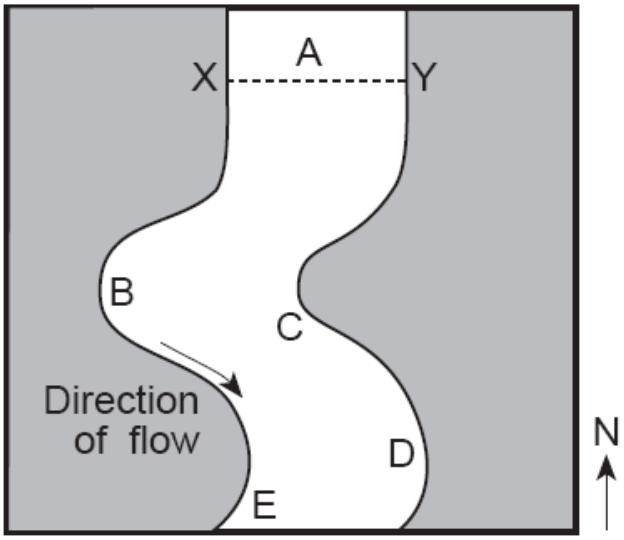
Landscape	Bedrock	Elevation/Slopes	Streams
A	Faulted and folded gneiss and schist	High elevation Steep slopes	High velocity Rapids
B	Layers of sandstone and shale	Low elevation Gentle slopes	Low velocity Meanders
C	Thick horizontal layers of basalt	Medium elevation Steep to gentle slopes	High to low velocity Rapids and meanders

167 Which list best identifies landscapes *A*, *B*, and *C*?

?

(1) *A*—mountain, *B*—plain, *C*—plateau
(2) *A*—plain, *B*—plateau, *C*—mountain
(3) *A*—plateau, *B*—mountain, *C*—plain
(4) *A*—plain, *B*—mountain, *C*—plateau

Base your answers to questions 168 through 170 on the map below, which shows a portion of a stream in New York State that flows southward. Letters *A* through *E* represent locations in the stream. Line *XY* is the location of a cross section.



168 At which two locations in this stream is deposition normally dominant over erosion?

(1) *A* and *D*
(2) *B* and *E*
(3) *C* and *E*
(4) *D* and *C*

?

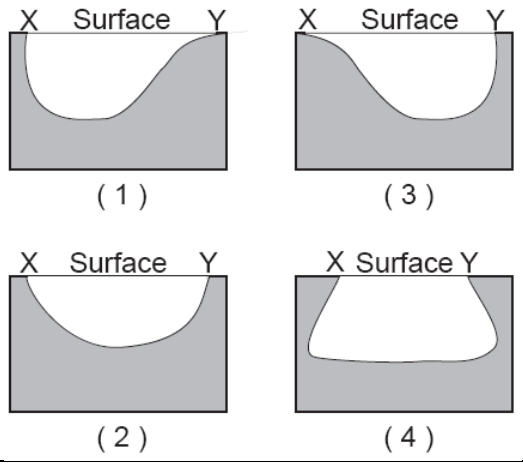
169 Where this stream's velocity decreases from 300 to 200 centimeters per second, which size sediment will be deposited?

(1) cobbles
(2) sand
(3) silt
(4) clay

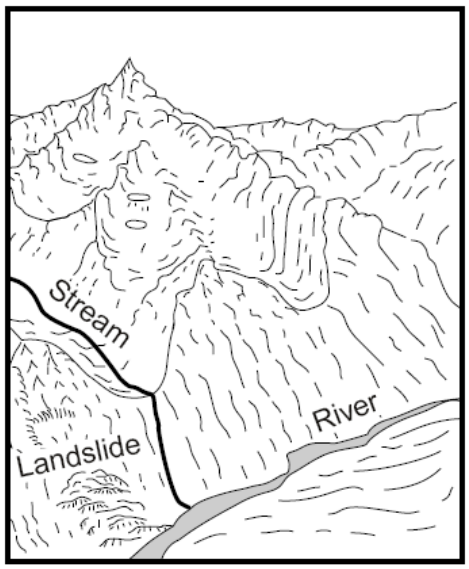
?

170 Which cross section along line *XY* best represents the shape of the stream bottom?

?



171 The diagram below shows a glacial landscape. Which evidence suggests that ice created this landscape?



(1) U-shaped valleys
(2) many stream valleys
(3) sorted sediment on the valley floor
(4) the landslide near the valley floor

?

172 What is the largest particle that can be kept in motion by a stream that has a velocity of 100 centimeters per second?

(1) silt
(2) sand
(3) pebble
(4) cobble

?

173 Where is the most deposition likely to occur?

(1) on the side of a sand dune facing the wind
(2) at the mouth of a river, where it enters an ocean
(3) at a site where glacial ice scrapes bedrock
(4) at the top of a steep slope in a streambed

?

174 When small particles settle through water faster than large particles, the small particles are probably

(1) lighter
(2) flatter
(3) better sorted
(4) more dense

?