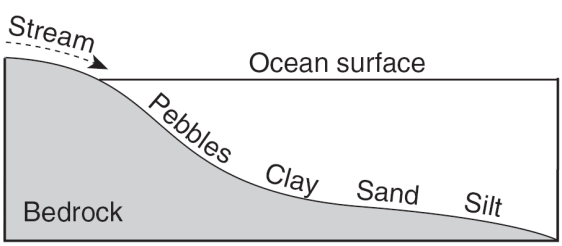
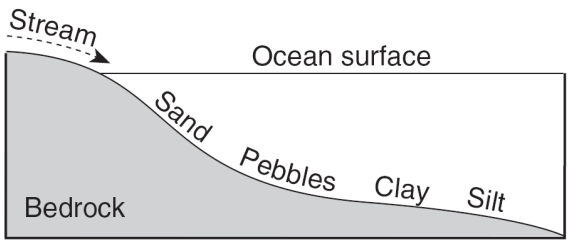
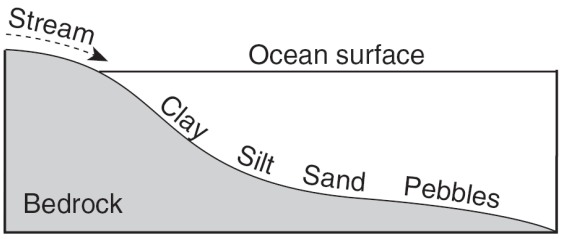
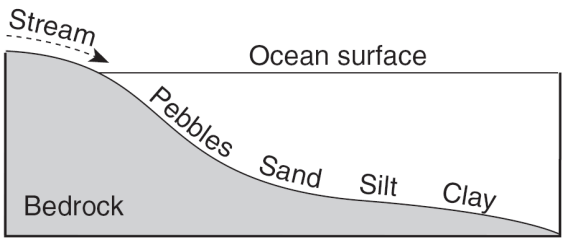
Name _____ **Regents Review #6** Date _____

____ 1. Which profile best shows the general depositional pattern that occurs when water from a stream enters the ocean?

A)


B)


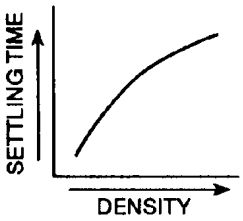
C)


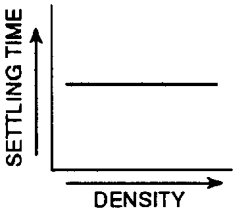
D)


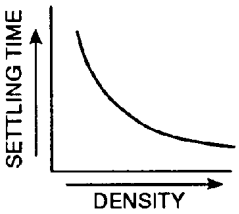
____ 2. Which long-term atmospheric changes would increase the rate of chemical weathering of surface bedrock?

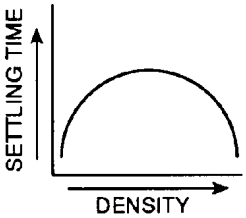
A) decreasing temperature and decreasing precipitation
B) decreasing temperature and increasing precipitation
C) increasing temperature and decreasing precipitation
D) increasing temperature and increasing precipitation

____ 3. Which graph shows the relationship between the density of particles and their settling time in still water?[Assume that the particles have the same size and shape.]

A)


B)


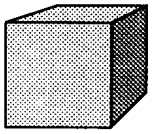
C)


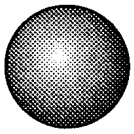
D)


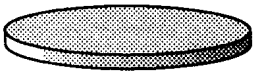
____ 4. Four samples of aluminum, *A*, *B*, *C*, and *D*, have identical volumes and densities, but different shapes. Each piece is dropped into a long tube filled with water. The time each sample takes to settle to the bottom of the tube is shown in the table below.

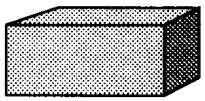
Sample	Time to Settle (sec)
A	2.5
B	3.7
C	4.0
D	5.2

Which diagram most likely represents the shape of sample *A*?

A)


B)


C)


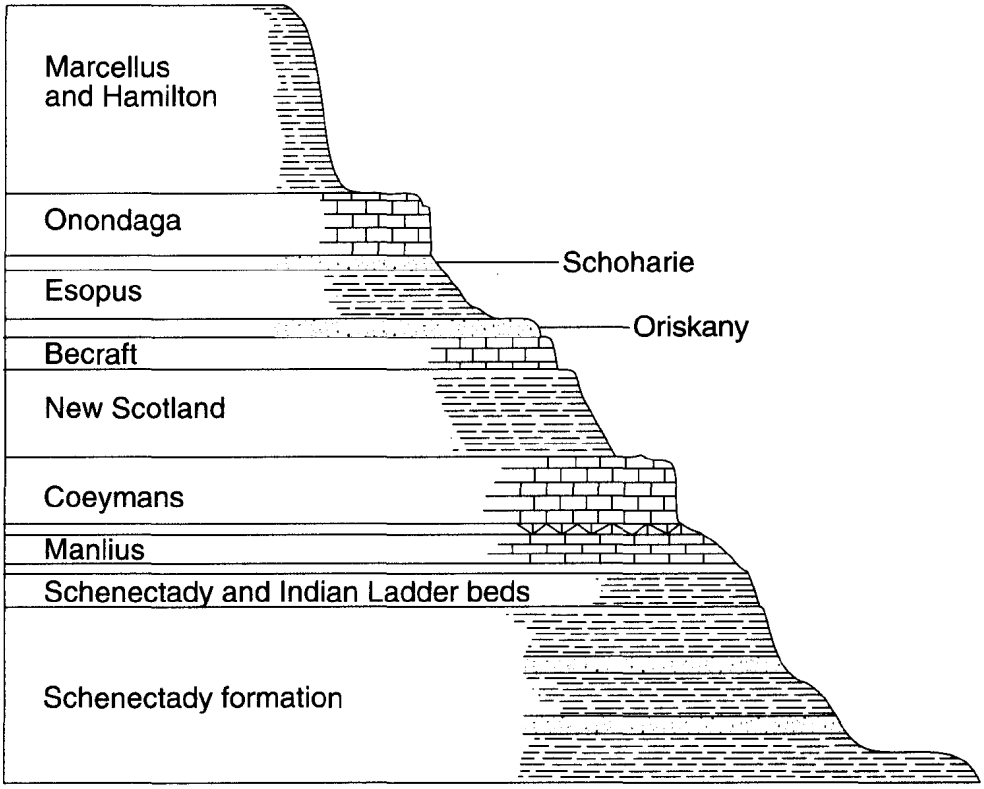
D)


____ 5. Which sediment is most easily picked up and transported by the wind?

A) cobbles B) pebbles
C) sand D) silt

Regents Review #6

Base your answers to questions **6** and **7** on the cross section below, which shows the bedrock of a portion of the Helderberg Escarpment, located in Tacher State Park near Albany, New York. The rock formations are identified by name.



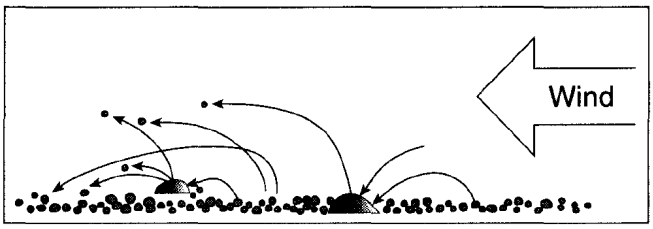
____ 6. Which formations appear to be the most resistant to weathering?

A) Esopus and Oriskany
B) Onondaga and Coeymans
C) Schoharie, and Marcellus and Hamilton
D) New Scotland, and Schenectady and Indian Ladder beds

____ 7. What is the main factor that causes the bedrock to weather at different rates?

A) elevation above sea level
B) mineral composition
C) age of rock layers
D) environment of formation

____ 8. 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?

A) deserts and beaches
B) deltas and floodplains
C) glaciers and moraines
D) mountain peaks and escarpments

____ 9. Which statement best describes sediments deposited by glaciers and rivers?

A) Glacial deposits and river deposits are both sorted.
B) Glacial deposits are sorted, and river deposits are unsorted.
C) Glacial deposits are unsorted, and river deposits are sorted.
D) Glacial deposits and river deposits are both unsorted.

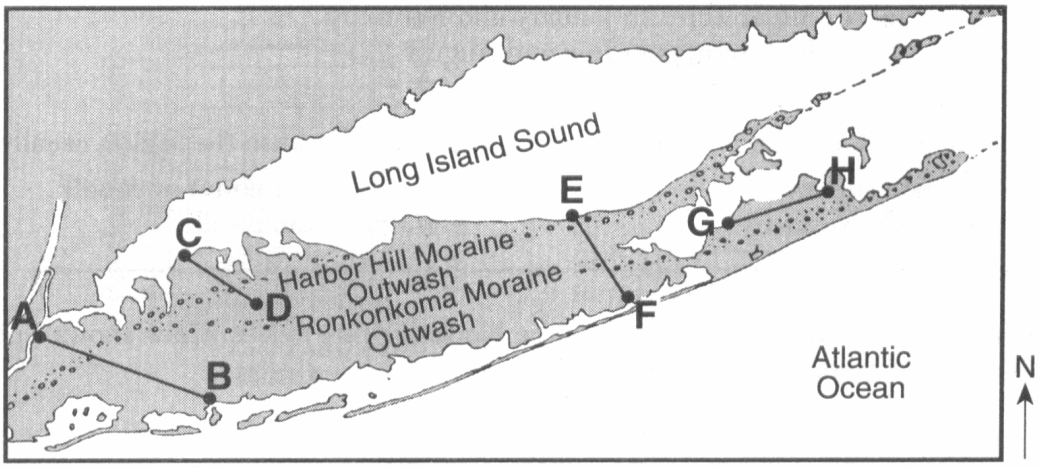
____ 10. Which size particle will remain suspended longest as a river enters the ocean?

A) pebble
B) sand
C) silt
D) clay

Regents Review #6

Base your answers to questions **11** through **13** on the map of Long Island, New York. *AB, CD, EF* and *GH* are reference lines on the map.

Map



____ 11. The cross section below represents the sediments beneath the land surface along one of the reference lines shown on the map.

Along which reference line was the cross section taken?

A) *AB* B) *CD* C) *EF* D) *GH*

____ 12. Which agent of erosion transported the sediments that formed the moraines shown on the map?

A) water B) wind
C) ice D) mass movement

____ 13. A major difference between sediments in the outwash and sediments in the moraines is that the sediments deposited in the outwash are

A) larger B) sorted C) more angular D) older

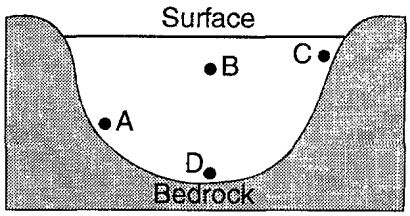
____ 14. Deposition within a meandering stream usually occurs on the inside of the curves because the

A) water velocity decreases
B) stream gradient increases
C) water is deeper
D) stream is narrower

____ 15. Which natural agent of erosion is mainly responsible for the formation of the barrier islands along the southern coast of Long Island, New York?

A) mass movement B) running water
C) prevailing winds D) ocean waves

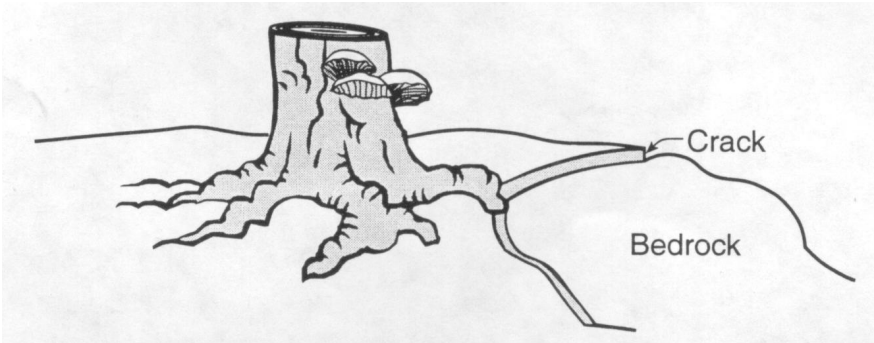
____ 16. The diagram below shows a cross section of a river. Letters *A*, *B*, *C*, and *D* represent points in the river.



At which point is the water most likely to have the greatest velocity?

A) *A* B) *B* C) *C* D) *D*

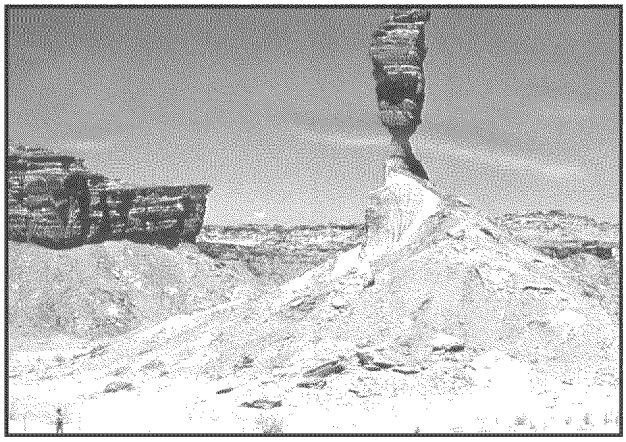
____ 17. The diagram below shows the stump of a tree whose root grew into a small crack in bedrock and split the rock apart.



The action of the root splitting the bedrock is an example of

A) chemical weathering
B) deposition
C) erosion
D) physical weathering

____ 18. The picture below shows a geological feature in the Kalahari Desert of southwestern Africa.



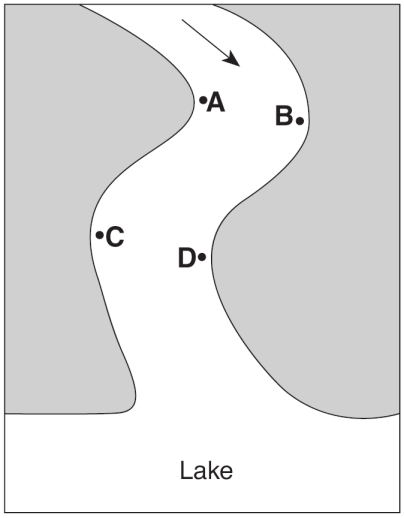
Which process most likely produced the present appearance of this feature?

A) wind erosion
B) volcanic eruption
C) earthquake vibrations
D) plate tectonics

____ 19. What change will a pebble usually undergo when it is transported a great distance by streams?

A) It will become jagged and its mass will decrease.
B) It will become jagged and its volume will increase.
C) It will become rounded and its mass will increase.
D) It will become rounded and its volume will decrease.

____ 20. The map below shows a meandering stream as it enters a lake. The arrow shows the direction of stream flow. Points *A* through *D* represent locations on the surface of the stream.



The greatest stream velocities are found closest to points

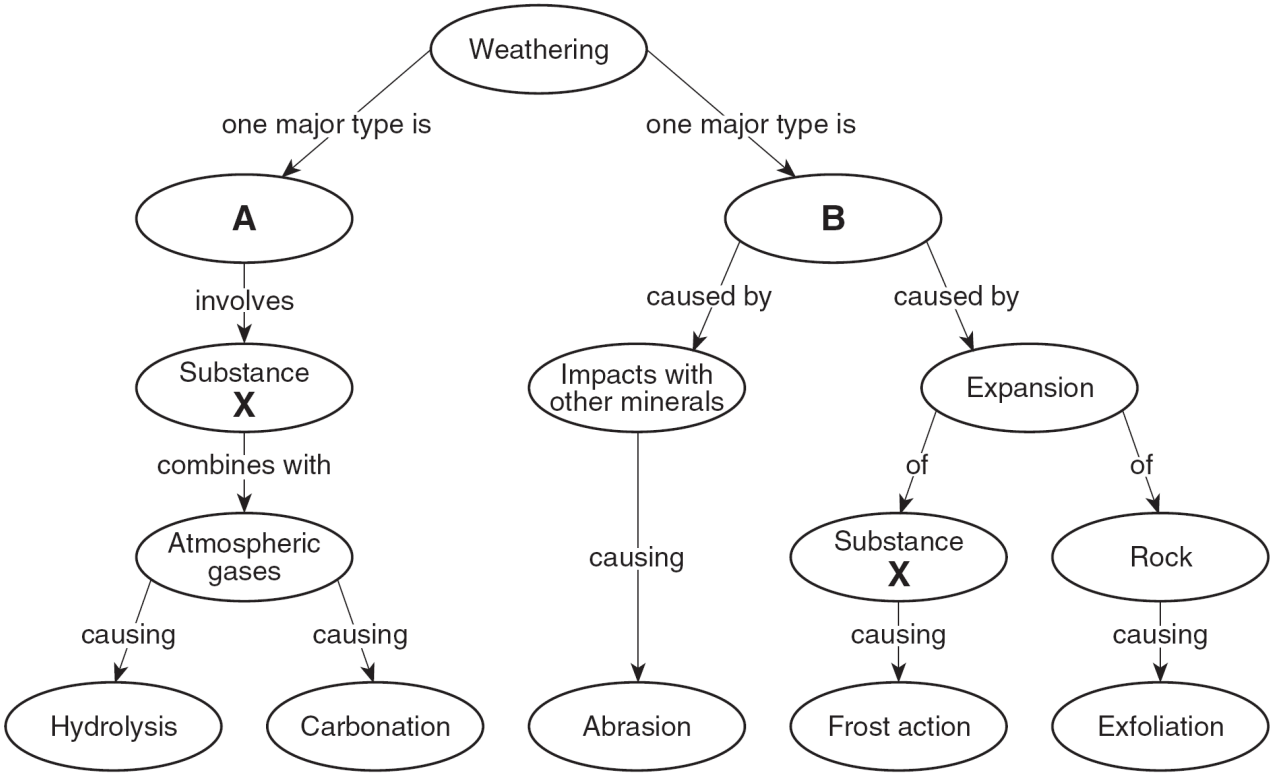
A) *A* and *B*
B) *B* and *C*
C) *C* and *D*
D) *D* and A

____ 21. Which agent of erosion was primarily responsible for forming the long, narrow, U-shaped valleys in the Finger Lakes region of New York State?

A) wind
B) landslides
C) meandering streams
D) continental glaciers

Regents Review #6

Base your answers to questions **22** through **24** on 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

____ 22. Which term best identifies the type of weathering represented by *A*?

A) physical B) biological C) chemical D) glacial

____ 23. Which weathering process is most common in a hot, dry environment?

A) abrasion B) carbonation C) frost action D) hydrolysis

____ 24. Which substance is represented by *X* on both sides of the flowchart?

A) potassium feldspar B) air
C) hydrochloric acid D) water

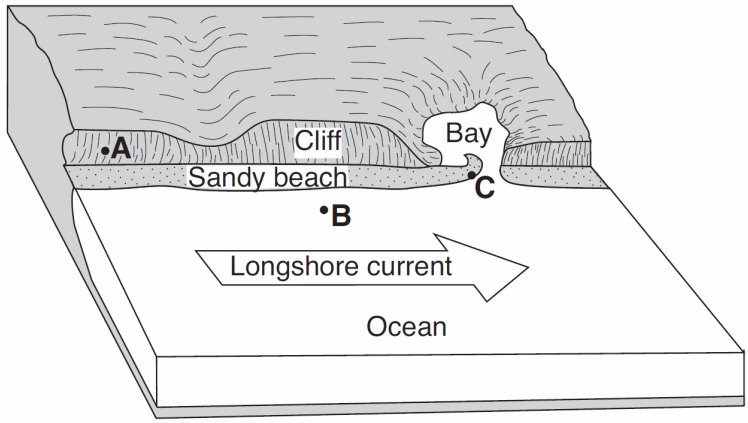
____ 25. At the present time, glaciers occur mostly in areas of

A) high latitude or high altitude
B) low latitude or low altitude
C) middle latitude and high altitude
D) middle latitude and low altitude

____ 26. The mineral composition of a residual soil is most affected by the

A) depth of the water table
B) elevation of the surface
C) steepness of hillslopes
D) type of bedrock material

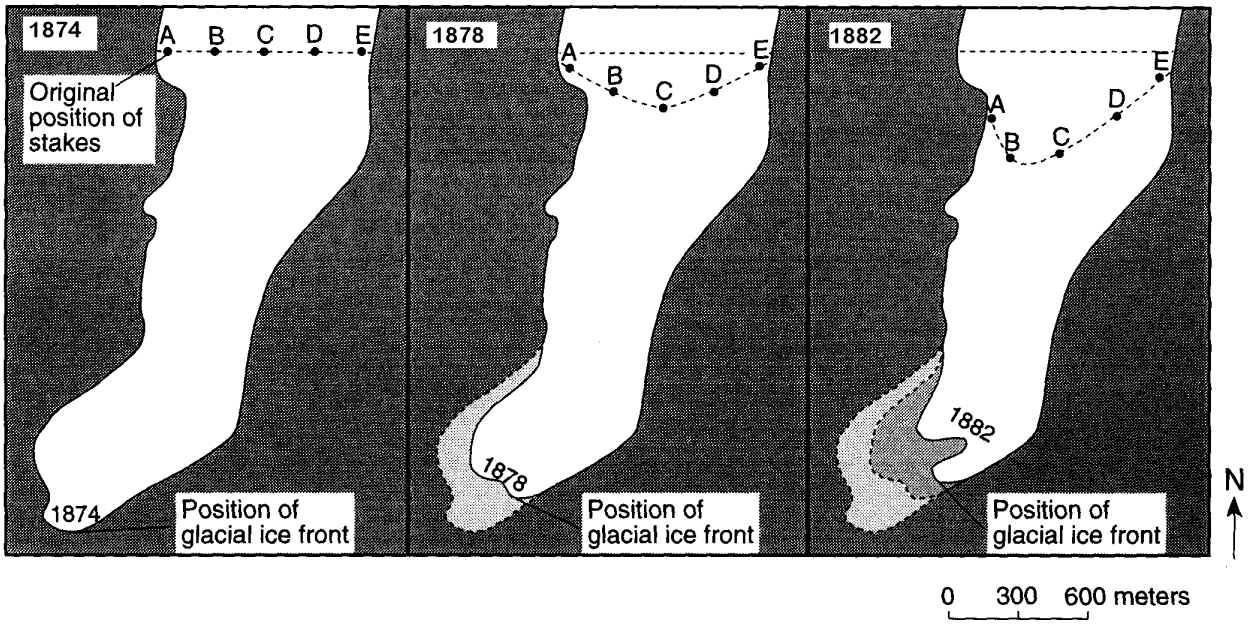
____ 27. The block diagram below shows a part of the eastern coastline of North America. Points *A*, *B*, and *C* are reference points along the coast.



Which list best represents the primary processes occurring along the coastline at points *A*, *B*, and *C*?

A) *A* — folding; *B* — subduction; *C* — crosscutting
B) *A* — weathering; *B* — erosion; *C* — deposition
C) *A* — faulting; *B* — conduction; *C* — mass movement
D) *A* — precipitation; *B* — infiltration; *C* — evaporation

Base your answers to questions **28** and **29** 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.



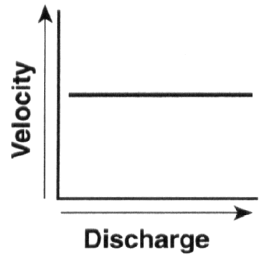
____ 28. Which statement best describes the changes happening to this glacier between 1874 and 1882?

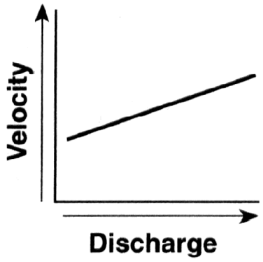
A) The ice front was advancing, and the ice within the glacier was advancing.
B) The ice front was advancing, and the ice within the glacier was retreating.
C) The ice front was retreating, and the ice within the glacier was advancing.
D) The ice front was retreating, and the ice within the glacier was retreating.

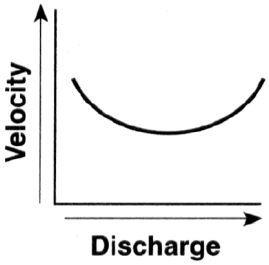
____ 29. The changing positions of markers A, B. C, D, and E show that the glacial ice is

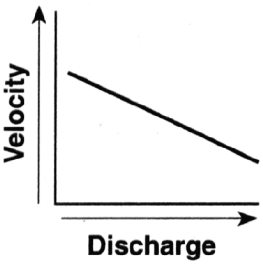
A) slowly becoming thicker
B) forming smaller crystals
C) gradually shifting northward
D) moving fastest near the middle

____ 30. Which graph best represents the relationship between the discharge of a stream and the velocity of stream flow?

A)


B)


C)


D)


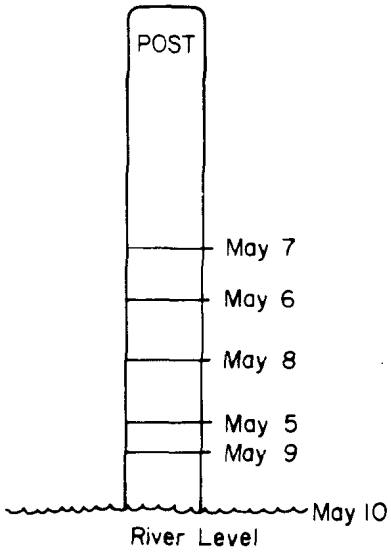
____ 31. The table below shows the rate of erosion and the rate of deposition at four stream locations.

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

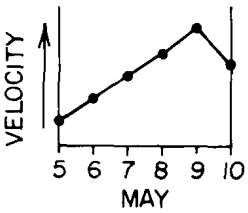
A state of dynamic equilibrium exists at location

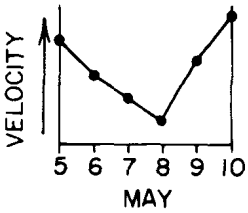
A) *A* B) *B* C) *C* D) *D*

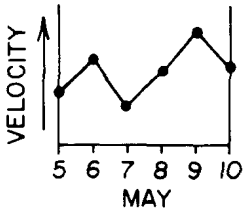
____ 32. The diagram below shows a post set in the streambed of a river. The river levels between May 5 and May 10 were recorded on the post by an observer at noon each day.

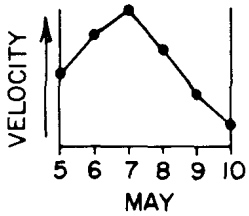


Which graph shows the probable stream current velocity that occurred during this same time period?

A)


B)


C)


D)


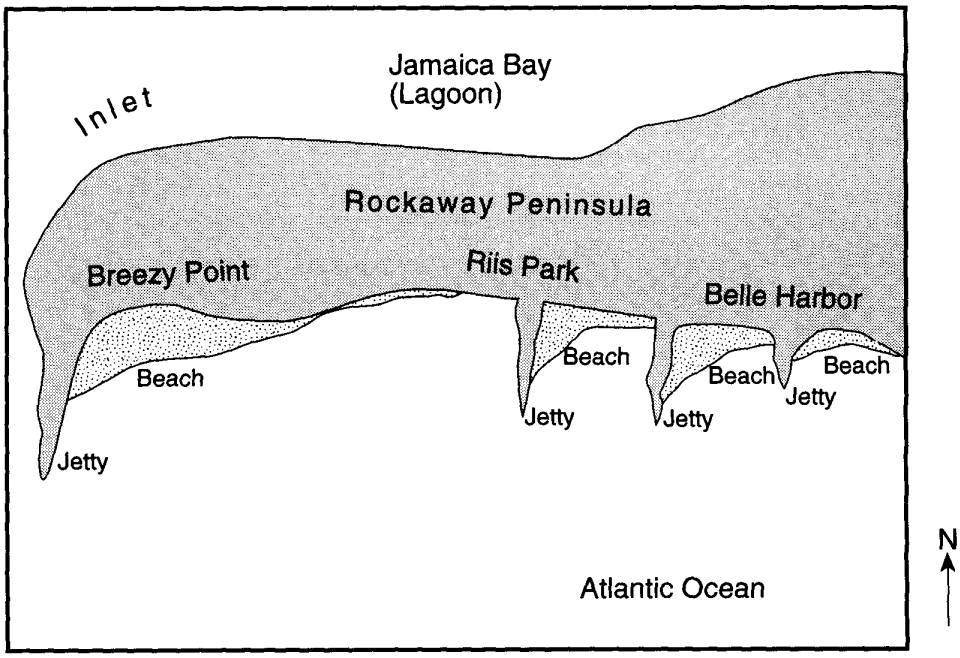
____ 33. Which change at a particular location in a stream usually causes more sediments to be deposited at that location?

A) decrease in stream velocity
B) decrease in stream width
C) increase in stream slope
D) increase in stream discharge

____ 34. In which climate would the chemical weathering of limestone occur most rapidly?

A) cold and dry
B) cold and humid
C) warm and dry
D) warm and humid

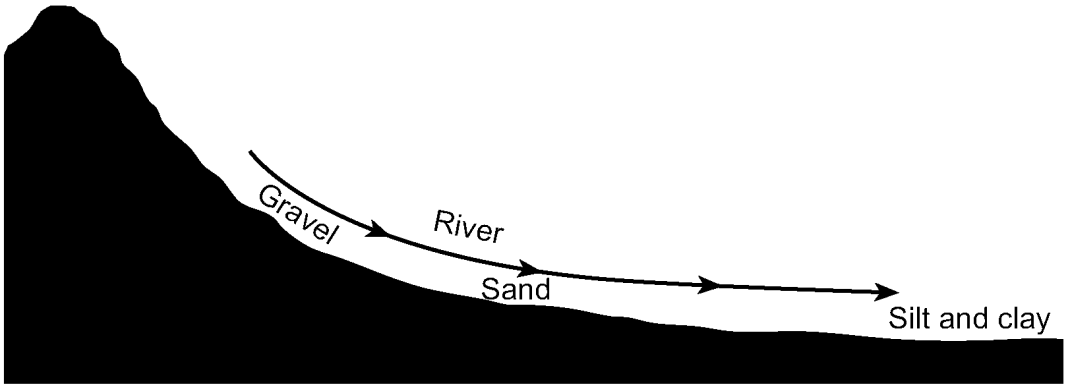
____ 35. Base your answer to the following question on the map below.



Toward which direction is sand being transported along the shoreline within the zone of breaking waves?

A) northeast B) south C) southeast D) west

____ 36. 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?

A) velocity of the river water B) hardness of the surface bedrock
C) mineral composition of the sediment D) temperature of the water

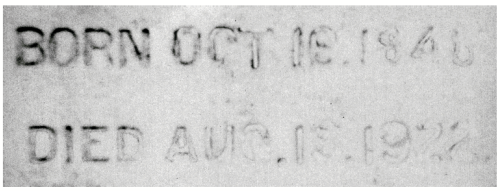
____ 37. Glaciers often form parallel scratches and grooves in bedrock because glaciers

A) deposit sediment in unsorted piles
B) deposit rounded sand in V-shaped valleys
C) continually melt and refreeze
D) drag loose rocks over Earth's surface

____ 38. Which change in climate would most likely cause the greatest increase in chemical weathering of local bedrock?

A) lower temperature in winter
B) lower humidity in winter
C) higher atmospheric pressure in summer
D) greater precipitation in summer

____ 39. 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.



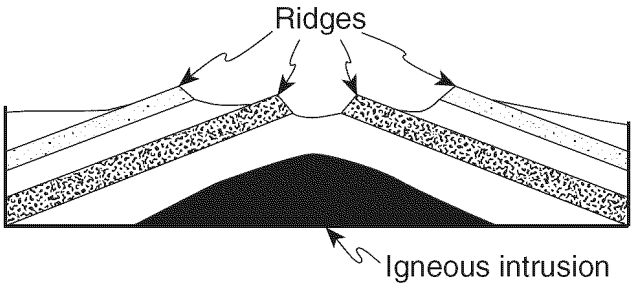
Tombstone A (1922)

Tombstone B (1892)

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

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

____ 40. The cross section below shows rock layers that underwent crustal movement during an igneous intrusion in the Cretaceous Period.



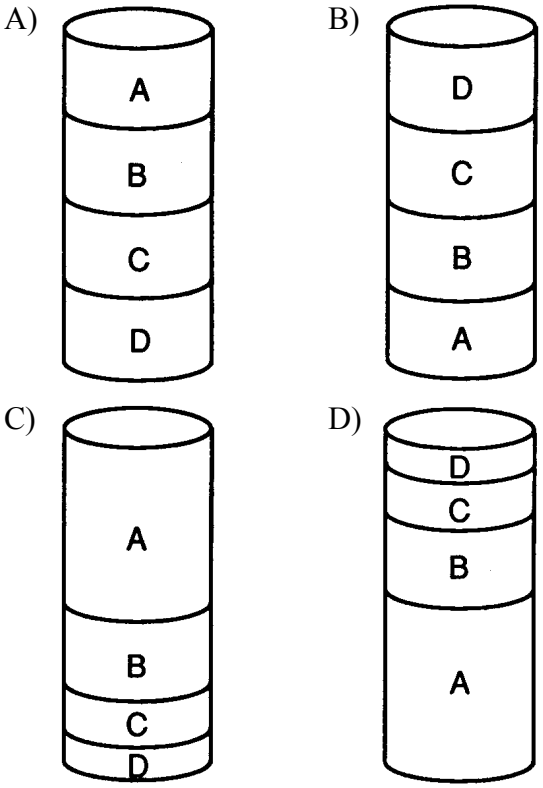
Which statement best describes the cause of the ridges shown?

A) The rock layers were evenly weathered.
B) Some rock layers were more resistant to weathering and erosion.
C) The igneous intrusion flowed over the surface.
D) More deposition occurred at the ridge sites after uplift.

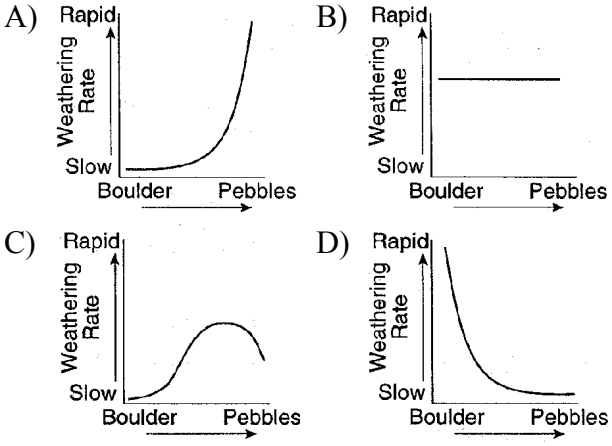
____ 41. Four different kinds of particles (*A*, *B*, *C*, and *D*) with the same shape and diameter were mixed and poured into a column of water. The mass, volume, and density of the particles are shown below.

Particle	Mass (g)	Volume (cm^3)	Density (g/cm^3)
A	100	67	1.5
B	100	33	3.0
C	100	22	4.5
D	100	17	6.0

Which diagram best shows how the particle beds would be arranged in the column of water after settling?



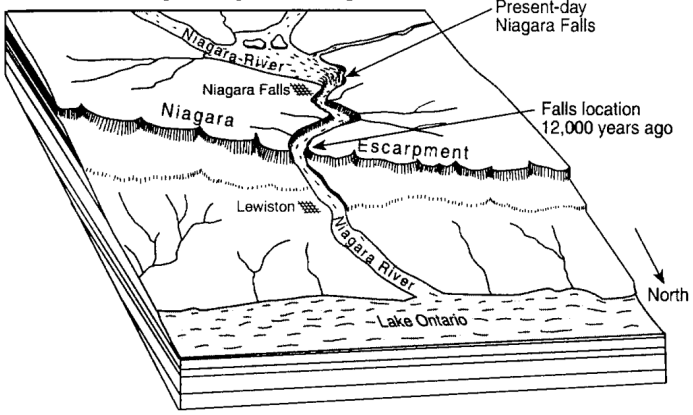
____ 42. Which graph best represents the chemical weathering rate of a limestone boulder as the boulder is broken into pebble-sized particles?



Base your answers to questions **43** and **44** on the block diagram and the cross section below. The block diagram shows the present position of Niagara Falls in relation to the Niagara Escarpment. The cross section shows the general bedrock structure of present-day Niagara Falls.

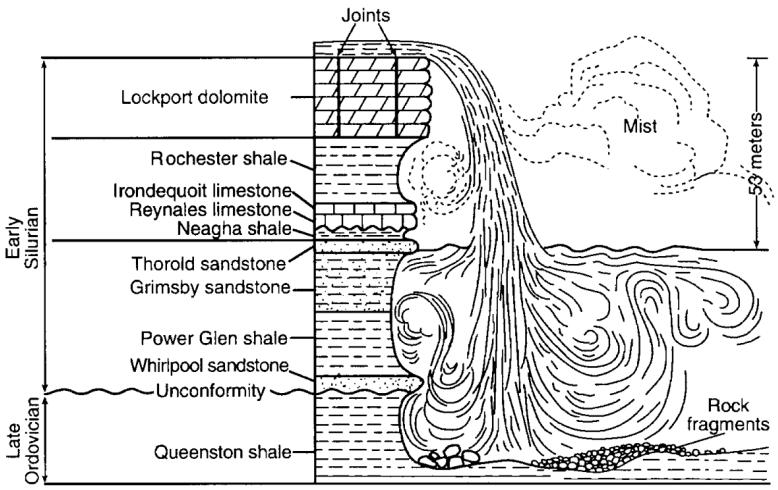
Block Diagram

View of Niagara Region, Looking South



(Vertical Exaggeration 2x)

Cross Section



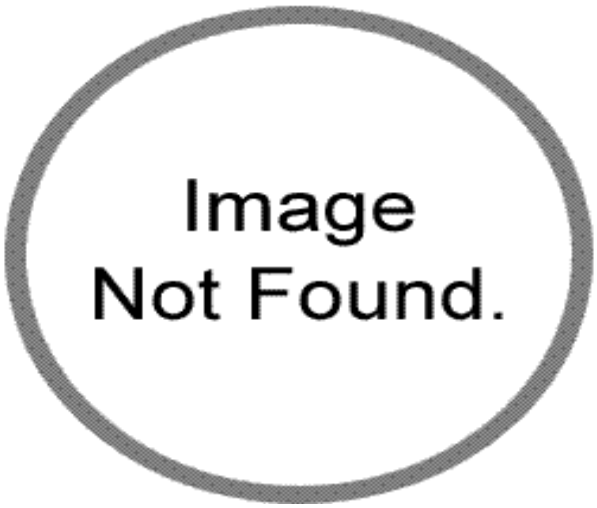
____ 43. Which evidence in the cross section of Niagara Falls most clearly shows that erosion is occurring today?

A) upper rock units of early Silurian age
B) layering of the rock units of the face of the falls
C) sand grains within the Grimsby and Whirlpool sandstones
D) piles of rock fragments at the base of the falls

____ 44. There are no major faults in the vicinity of the Niagara Escarpment that would explain its formation by crustal movement. What is the most logical explanation of how the escarpment formed?

A) Erosion removed the rock layers north of the escarpment.
B) The rock layers north of the escarpment were folded upward.
C) The Lockport dolomite was deposited south of the escarpment only.
D) The unconformity provided a layer that was resistant to the erosion of the river.

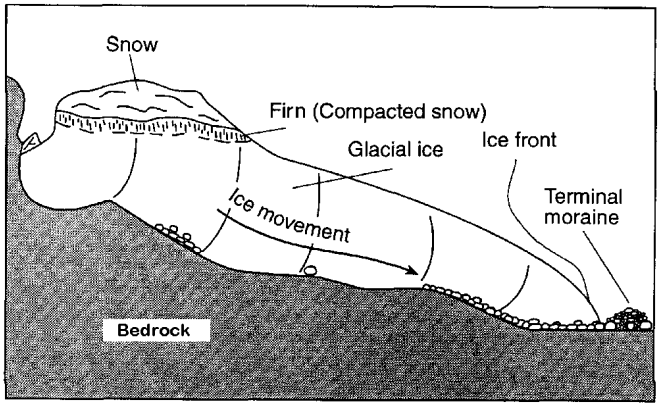
____ 45. The photograph below shows a large boulder of metamorphic rock in a field in the Allegheny Plateau region of New York State.



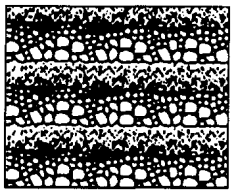
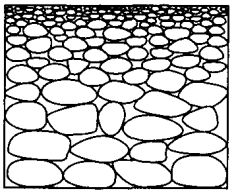
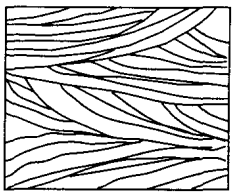
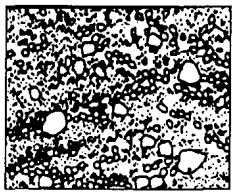
The boulder was most likely moved to this location by

A) glacial ice
B) prevailing wind
C) streamfiow
D) volcanic action

Base your answers to questions **46** through **48** on the diagram which represents a profile of a mountain glacier in the northern United States.



____ 46. Which cross section best represents the sediment that was transported and deposited by this glacier?

A) 
B) 
C) 
D) 

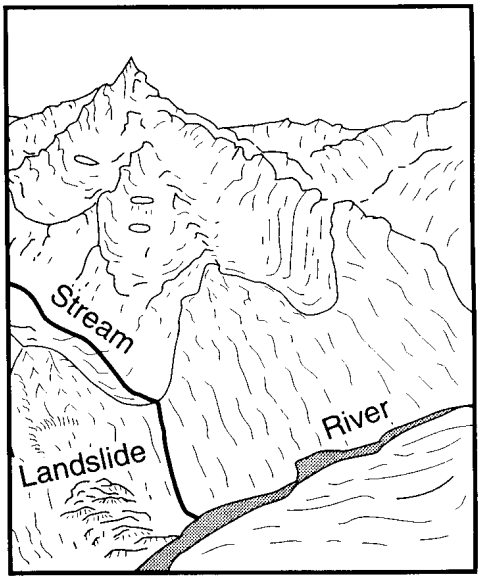
____ 47. If the climate warms, causing the glacier to melt away, the region that the glacier formerly occupied will be a

A) U-shaped valley with polished bedrock
B) V-shaped valley with jagged bedrock
C) flat plain with bedrock that has been metamorphosed
D) deep ocean trench with bedrock that has been melted and cooled

____ 48. Over a period of years, this glacier gains more snow mass than it loses. What will be the most likely result of this gain?

A) The glacier will decrease in size, and the ice front will retreat.
B) The glacier will decrease in size, and the ice front will advance.
C) The glacier will increase in size, and the ice front will retreat.
D) The glacier will increase in size, and the ice front will advance.

____ 49. The diagram below shows a glacial landscape.

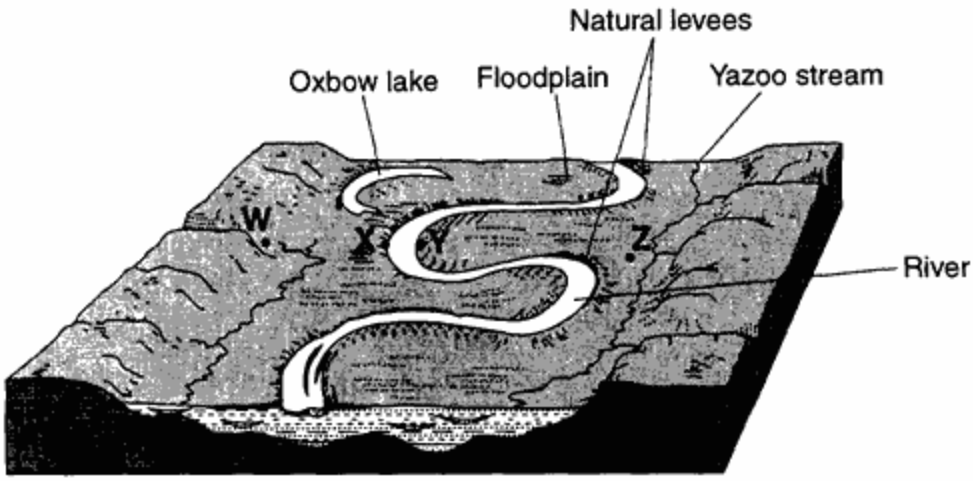


Which evidence suggests that ice created this landscape?

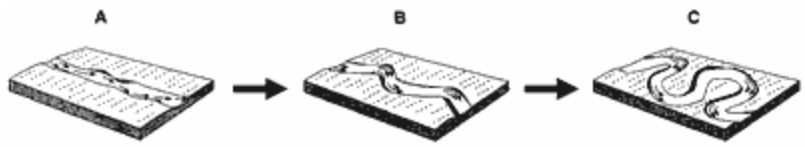
A) U-shaped valleys
B) many stream valleys
C) sorted sediment on the valley floor
D) the landslide near the valley

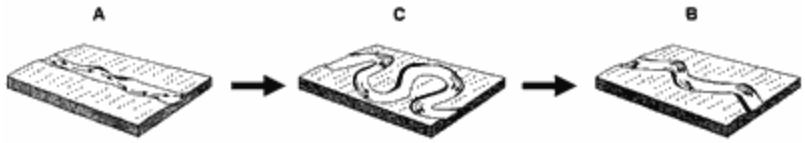
Regents Review #6

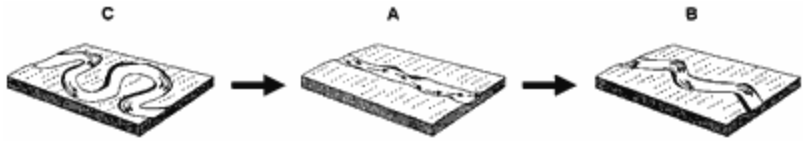
Base your answers to questions **50** through **54** on the diagram below, which represents the landscape features associated with a meandering river. Letters *W*, *X*, *Y*, and *Z* represent locations on the floodplain.

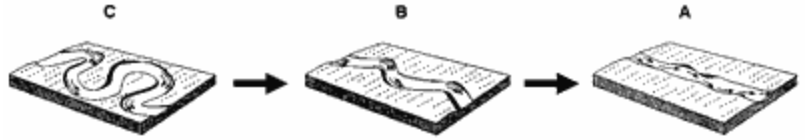


____ 50. The choices below represent stages in the formation of a meandering river. Which sequence ***best*** represents the usual changes over time?

A)


B)


C)


D)


____ 51. The natural levees are ridges of sediment that slope away from the riverbank toward the floodplain. Which process most likely formed these levees?

A) weathering of the soil on the riverbanks
B) erosion on the inside curves of the meanders
C) deposition by the yazoo stream
D) deposition when the river overflowed its banks

____ 52. At which location is erosion greatest?

A) *W* B) *X* C) *Y* D) *Z*

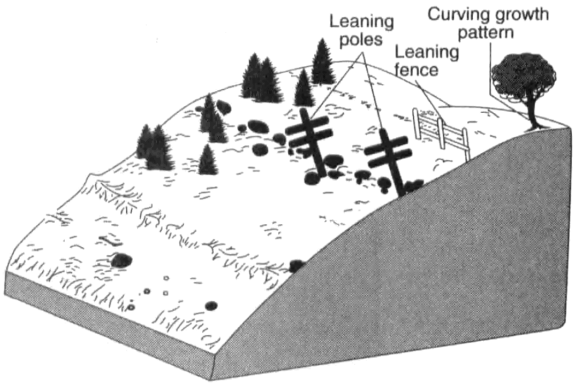
____ 53. Which change would most likely increase the velocity of the river?

A) a decrease in the slope of the river
B) a decrease in the temperature of the river
C) an increase in the river's discharge
D) an increase in the width of the river

____ 54. During transport by this river, a sediment particle will most likely become

A) more rounded B) more dense C) heavier D) larger

____ 55. 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?

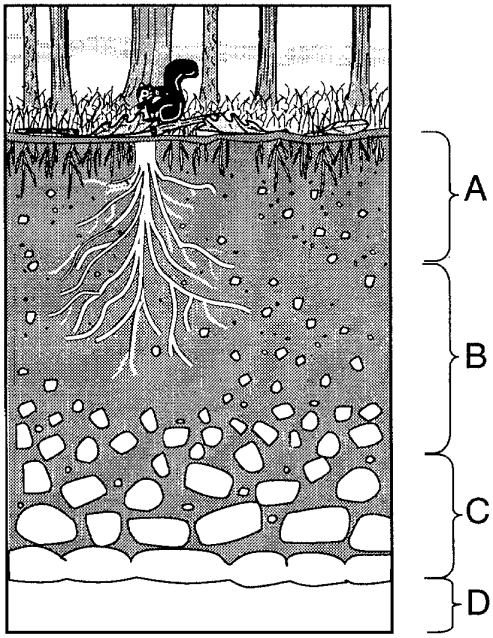
A) running water B) moving ice
C) prevailing wind D) mass movement

____ 56. The photograph below shows farm buildings partially buried in silt.

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

A) glacial ice B) ocean waves
C) wind D) mass movement

____ 57. The diagram below shows a soil profile formed in an area of granite bedrock. Four different soil horizons, *A*, *B*, *C*, and *D*, are shown.



Which soil horizon contains the greatest amount of material formed by biological activity?

A) *A* B) *B* C) *C* D) *D*

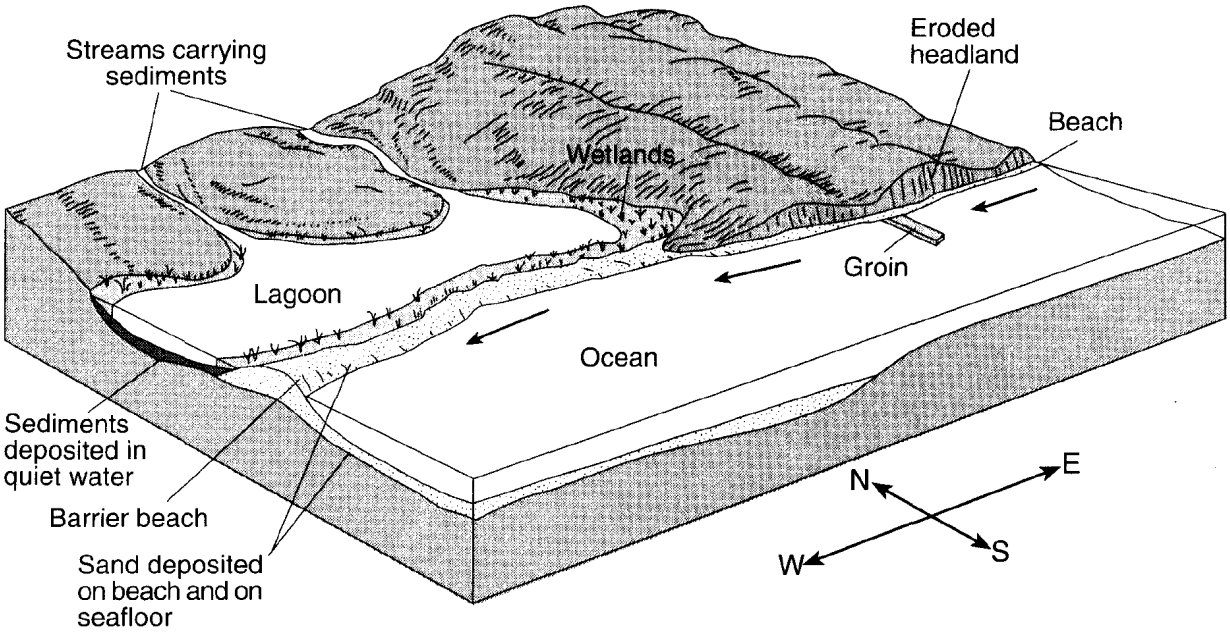
____ 58. Which condition causes glaciers to retreat?

A) They encounter the ocean.
B) The crust beneath them is uplifted.
C) Earth's average temperature decreases.
D) Their rate of melting exceeds their rate of advancing.

____ 59. The formation of soil is primarily the result of

A) stream erosion and mass movement
B) stream deposition and runoff
C) precipitation and wind erosion
D) weathering and biological activity

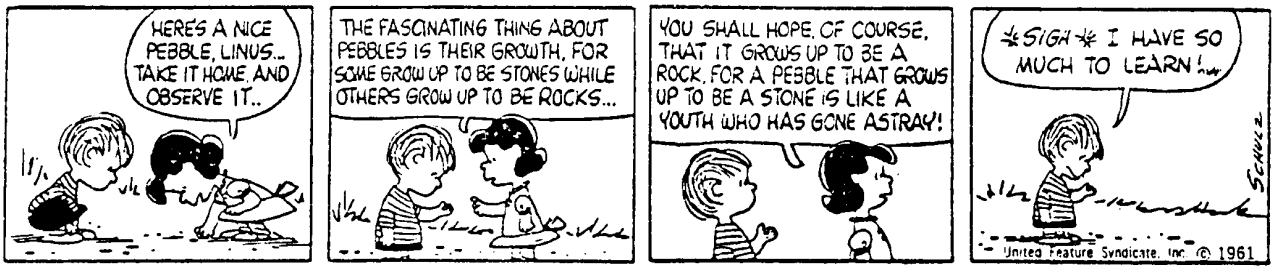
____ 60. Base your answer to the following question on the diagram below. The arrows show the direction in which sediment is being transported along the shoreline. A barrier beach has formed, creating a lagoon (a shallow body of water in which sediments are being deposited). The eroded headlands are 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.



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

A) wider on the western side of the groin
B) wider on the eastern side of the groin
C) narrower on both sides of the groin
D) wider on both sides of the groin

____ 61. In the cartoon below, Lucy gives Linus incorrect information about pebbles.



If Lucy wanted to give Linus correct information about pebbles, which statement would be most accurate?

A) Pebbles can become cemented together to form a rock called gabbro.
B) Pebble is the name given to the smallest-size sediment.
C) Any large rock that weathers could become a pebble.
D) Magma is composed of pebbles.

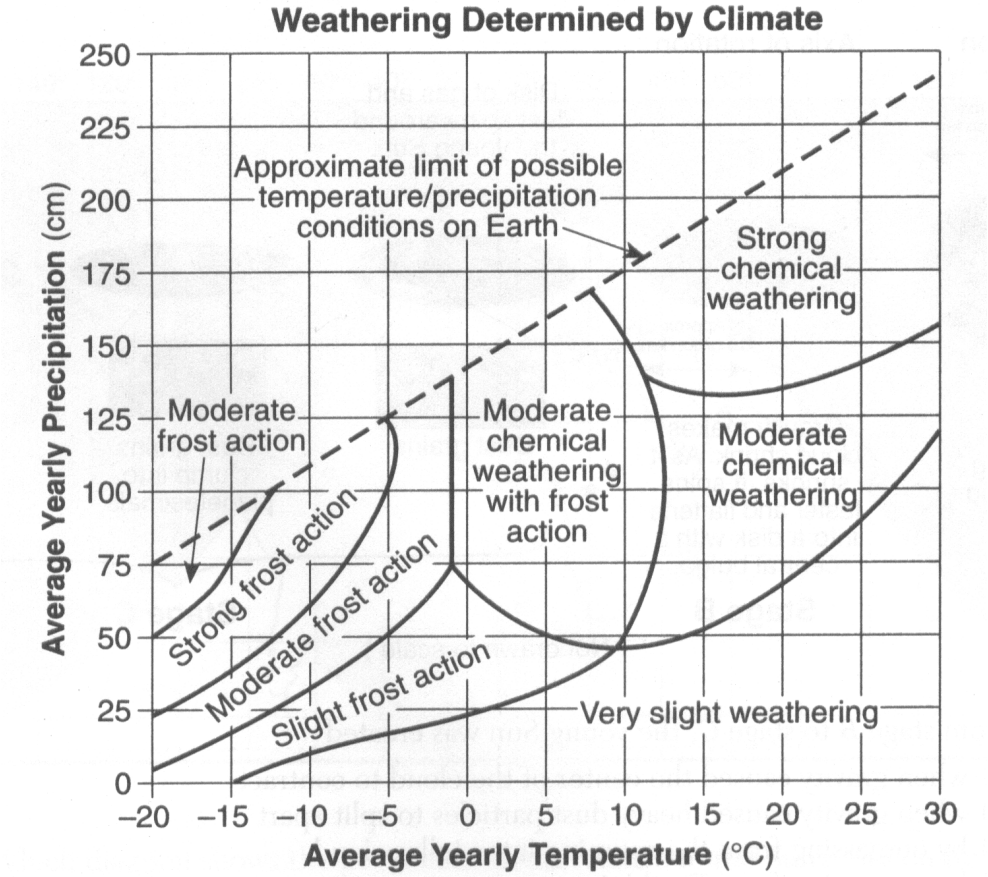
____ 62. Which characteristics of a particle would usually result in the longest settling time for the particle in calm water?

A) low density and round shape
B) low density and flat shape
C) high density and round shape
D) high density and flat shape

____ 63. Sediments found in glacial moraines are best described as

A) sorted and layered
B) sorted and not layered
C) unsorted and layered
D) unsorted and not layered

Base your answers to questions **64** and **65** 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.



____ 64. The amount of chemical weathering will increase if

A) air temperature decreases and precipitation decreases
B) air temperature decreases and precipitation increases
C) air temperature increases and precipitation decreases
D) air temperature increases and precipitation increases

____ 65. Which type of weathering is most common where the average yearly temperature is 5°C and the average yearly precipitation is 45 cm?

A) moderate chemical weathering
B) very slight weathering
C) moderate chemical weathering with frost action
D) slight frost action

____ 66. Which statement identifies a result of glaciation that has had a positive effect on the economy of Connecticut?

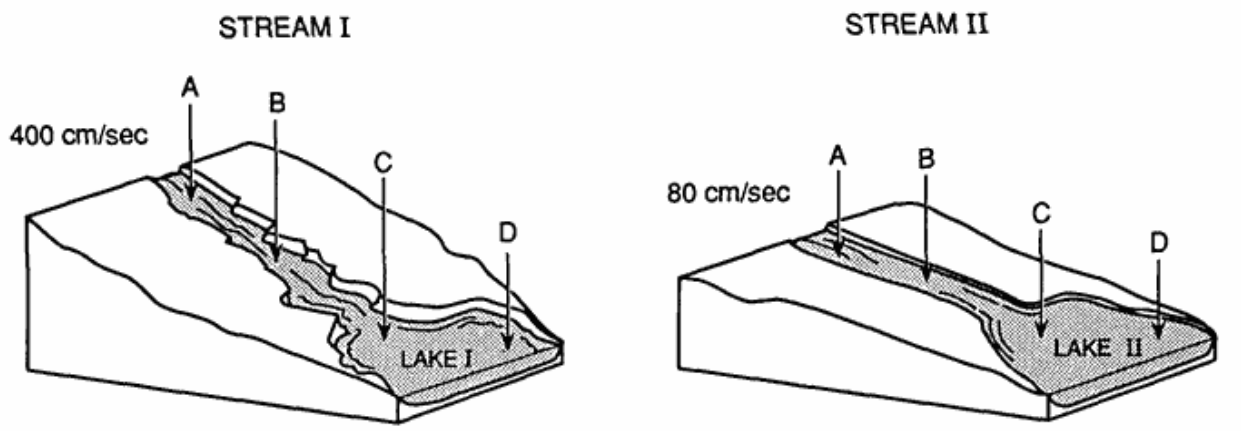
A) Large amounts of oil and natural gas were formed.
B) The number of usable water reservoirs was reduced.
C) Many deposits of sand and gravel were formed.
D) Deposits of fertile soil were removed.

____ 67. Why do most streams in the Northeast have a greater stream discharge in spring than in summer?

A) Potential evapotranspiration is greater in spring than in summer.
B) More transpiration occurs in spring than in summer.
C) Most New York State water budgets have a deficit in spring.
D) Melting snow increases runoff in spring.

Base your answers to questions **68** through **70** on the information and diagrams below.

A mixture of colloids, clay, silt, sand, pebbles, and cobbles is put into stream I at point *A*. The water velocity at point *A* is 400 centimeters per second. A similar mixture of particles is put into stream II at point *A*. The water velocity in stream II at point *A* is 80 centimeters per second.



____ 68. What will most likely occur when the transported sediment reaches lake II?

A) Clay particles will settle first.
B) The largest particles will be carried farthest into the lake.
C) The sediment will become more angular because of abrasion.
D) The particles will be deposited in sorted layers.

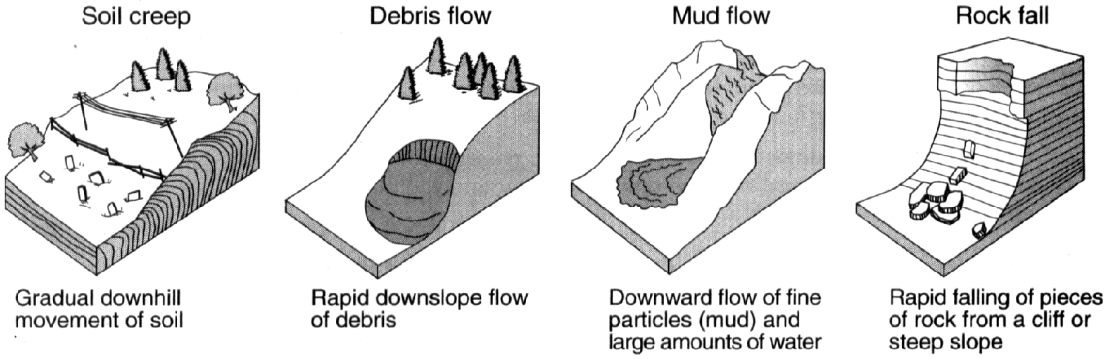
____ 69. Which statement is the most accurate description of conditions in both streams?

A) The greatest deposition occurs at point *B*.
B) Particles are carried in suspension and by bouncing along the bottom.
C) The particles will have a greater velocity than the water in the stream.
D) The velocity of the stream is the same at point *B* as at point *C*.

____ 70. In lake I, as the stream water moves from point *C* to point *D*, its velocity

A) decreases
B) increases
C) remains the same

____ 71. The diagrams below represent four different examples of one process that transports sediments.

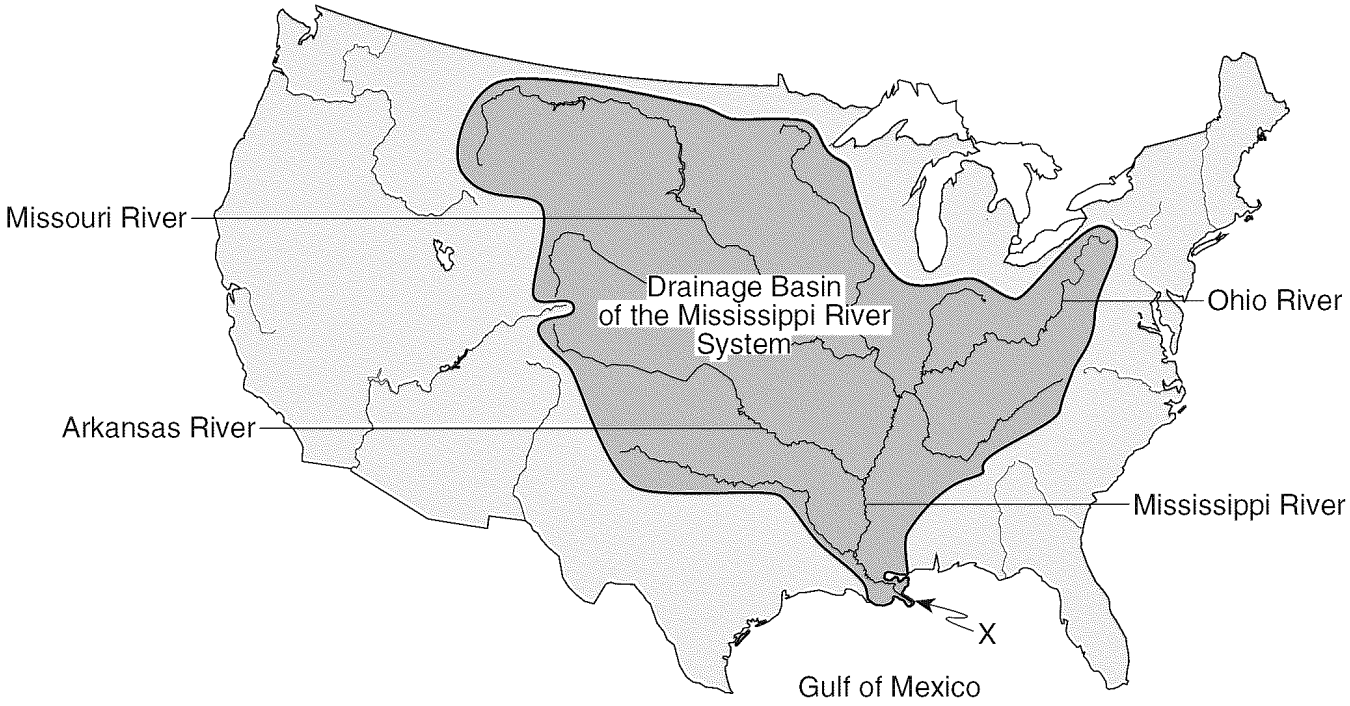


Which process is shown in these diagrams?

A) chemical weathering
B) wind action
C) mass movement
D) rock abrasion

Regents Review #6

Base your answers to questions **72** through **74** 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.



____ 72. The structure formed by the deposition of sediments at location *X* is best described as a

A) moraine B) tributary C) delta D) drumlin

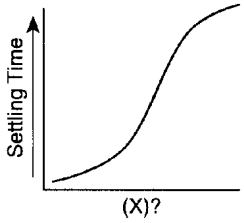
____ 73. Sediments deposited at location *X* by the Missisippi River most likely have which characteristics?

A) angular fragments arranged as mixtures
B) rock particles arranged in sorted beds
C) rocks with parallel scratches and grooves
D) high-density minerals with hexagonal crystals

____ 74. The entire land area drained by the Mississippi River system is referred to as a

A) levee B) watershed C) meander belt D) floodplain

____ 75. The graph below is incomplete because it does not identify the sediment characteristic (X) that would produce the line plotted on the graph.



Which label should be placed on the horizontal axis to accurately complete the graph?

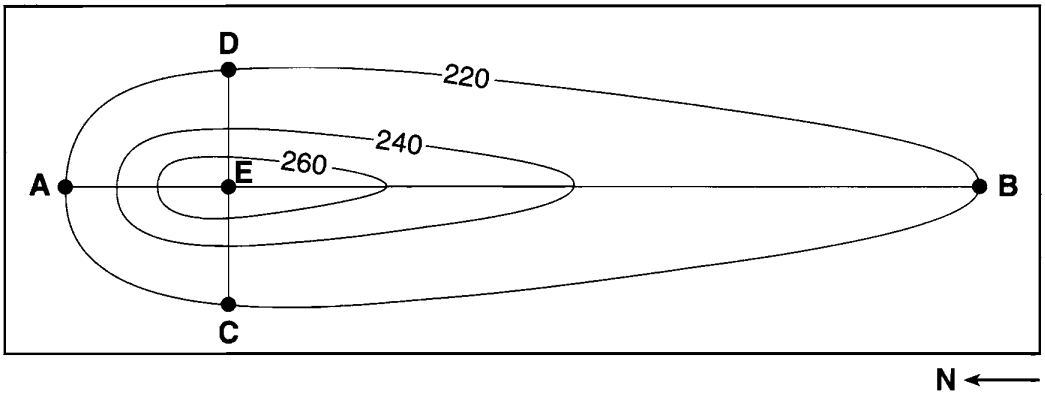
A) Low ⟶ High Particle Density
B) Small ⟶ Large Particle Size
C) Light ⟶ Heavy Particle Mass
D) Round ⟶ Flat Particle Shape

____ 76. Which type of climate has the greatest amount of rock weathering caused by frost action?

A) a wet climate in which temperatures remain below freezing
B) a wet climate in which temperatures alternate from below freezing to above freezing
C) a dry climate in which temperatures remain below freezing
D) a dry climate in which temperatures alternate from below freezing to above freezing

Base your answers to questions **77** through **79** 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



____ 77. This glacial deposit is best identified as

A) a V-shaped valley
B) a sand dune
C) a drumlin
D) an outwash plain

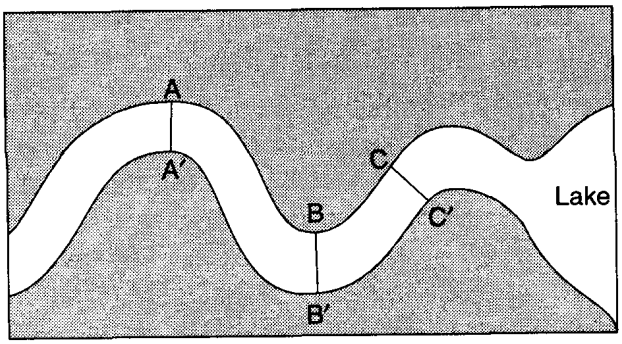
____ 78. In which direction was the glacier moving?

A) north
B) south
C) east
D) west

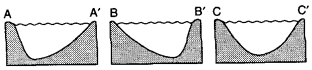
____ 79. Which set of characteristics most likely describes the sediment in this glacial deposit?

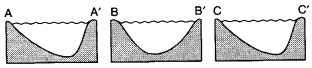
A) sorted and layered
B) sorted and not layered
C) unsorted and not layered
D) unsorted and layered

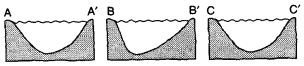
____ 80. The map below represents a meandering stream flowing into a lake. A student measured water depths in the stream at three locations: *A–A′*, *B–B′*, and *C–C′*.

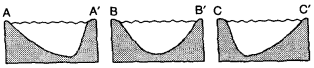


Which set of cross sections best represents the streambed at the three locations?

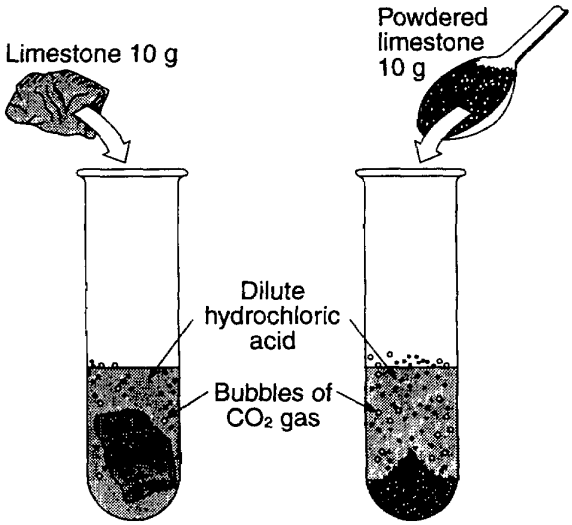
A) 

B) 

C) 

D) 

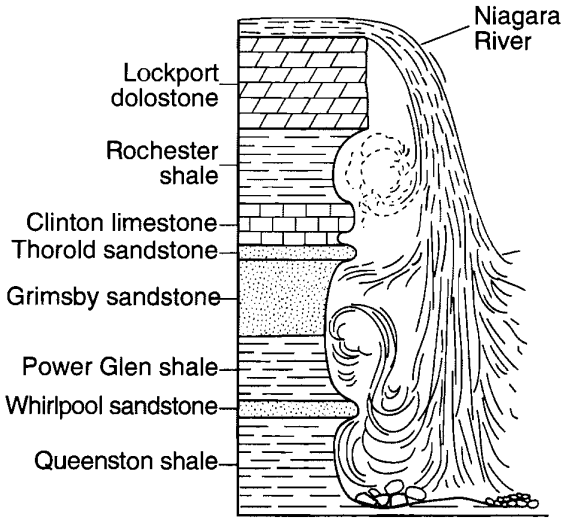
____ 81. The demonstration shown in the diagram below indicates that powdered limestone reacts faster than a single large piece of limestone of equal mass when both are placed in acid.



The most likely reason powdered limestone reacts faster is that it has

A) less total volume
B) more chemical bonds
C) more total surface area
D) lower density

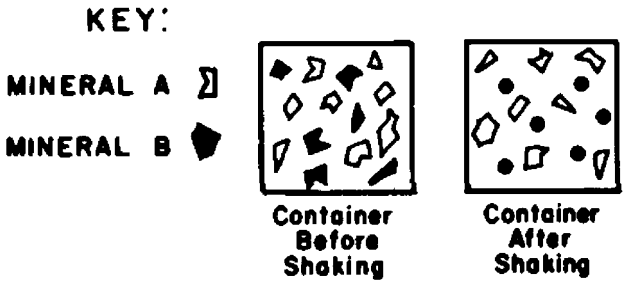
____ 82. The generalized cross section below shows the sedimentary rock layers at Niagara Falls in western New York State.



Which rock layer appears to be most resistant to weathering and erosion?

A) Lockport dolostone B) Rochester shale
C) Grimsby sandstone D) Queenston shale

____ 83. Two different kinds of minerals, *A* and *B*, were placed in the same container and shaken for 15 minutes. The diagrams below represent the size and shape of the various pieces of mineral before and after shaking. What caused the resulting differences in shapes and sizes of the minerals?



A) Mineral *B* was shaken harder.
B) Mineral *B* had a glossy luster.
C) Mineral *A* was more resistant to abrasion.
D) Mineral *A* consisted of smaller pieces before shaking began.

____ 84. Which characteristic would most likely remain constant when a limestone cobble is subjected to extensive abrasion?

A) shape B) mass
C) volume D) composition

Base your answers to questions **85** through **87** on the diagrams below. Diagrams *A, B,* and *C* represent three different river valleys.

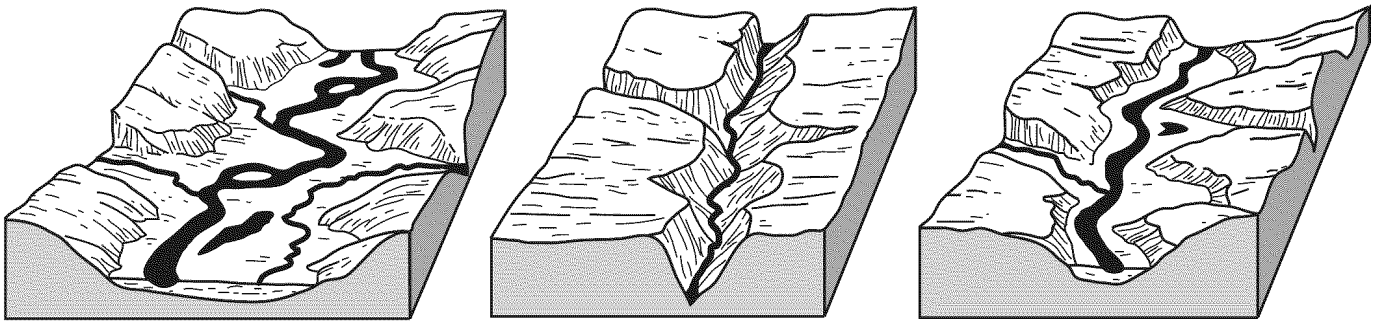
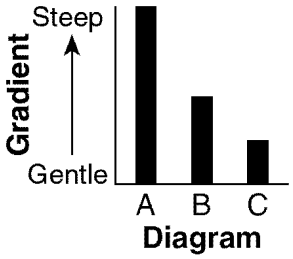
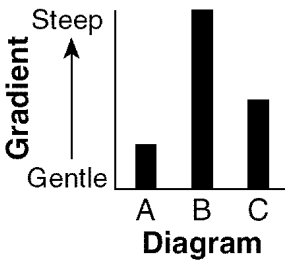
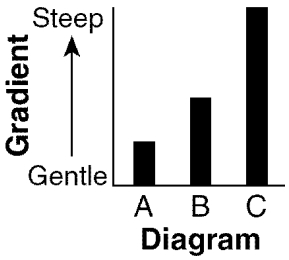


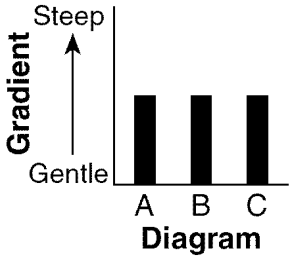
Diagram A **Diagram B** **Diagram C**

____ 85. Which bar graph best represents the relative gradients of the main rivers shown in diagrams *A, B,* and *C?*

A)


B)


C)


D)


____ 86. Most sediments found on the floodplain shown in diagram *A* are likely to be

A) angular and weathered from underlying bedrock
B) angular and weathered from bedrock upstream
C) rounded and weathered from underlying bedrock
D) rounded and weathered from bedrock upstream

____ 87. Which sequence of diagrams shows the progression over time of the stream channel?

A) A, B, C B) C, B, A C) A, C, B D) B, C, A

____ 88. Which factor has the greatest influence on the weathering rate of Earth's surface bedrock?

A) local air pressure
B) angle of insolation
C) age of the bedrock
D) regional climate

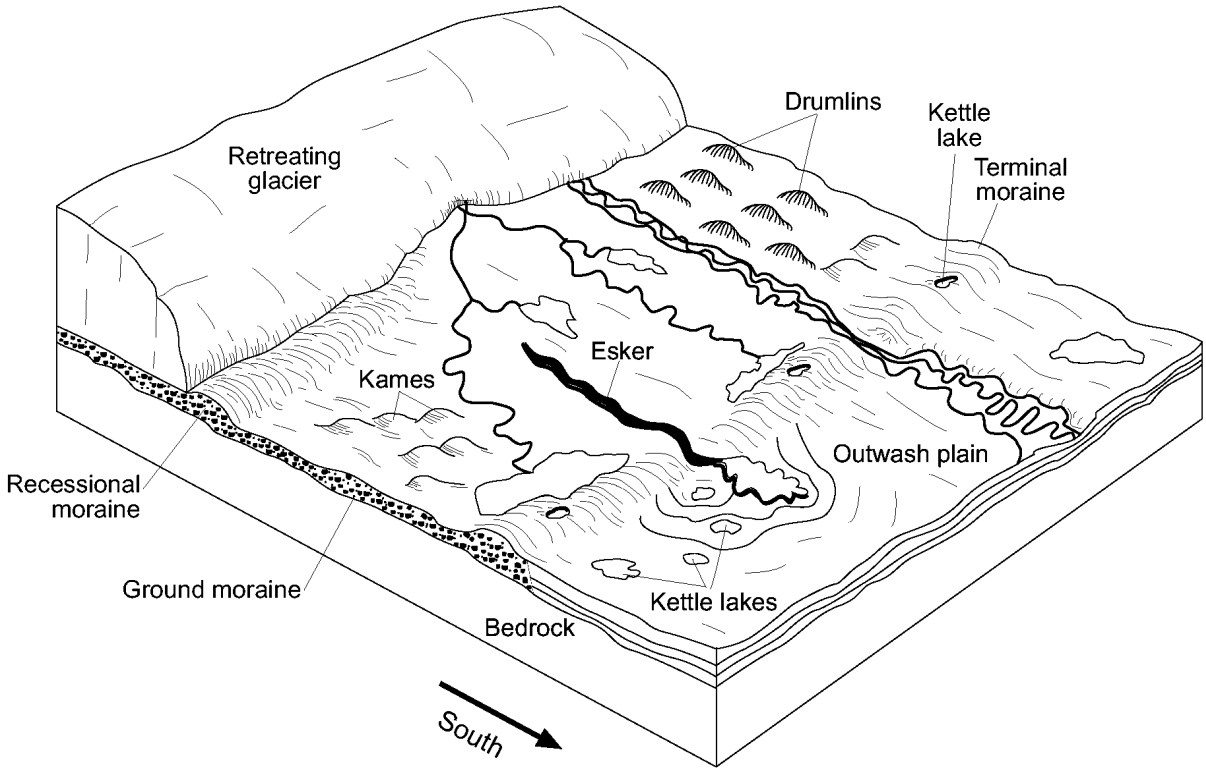
____ 89. How are dissolved materials carried in a river?

A) in solution
B) in suspension
C) by precipitation
D) by bouncing and rolling

____ 90. When small particles settle through water faster than large particles, the small particles are probably

A) lighter B) flatter
C) better sorted D) more dense

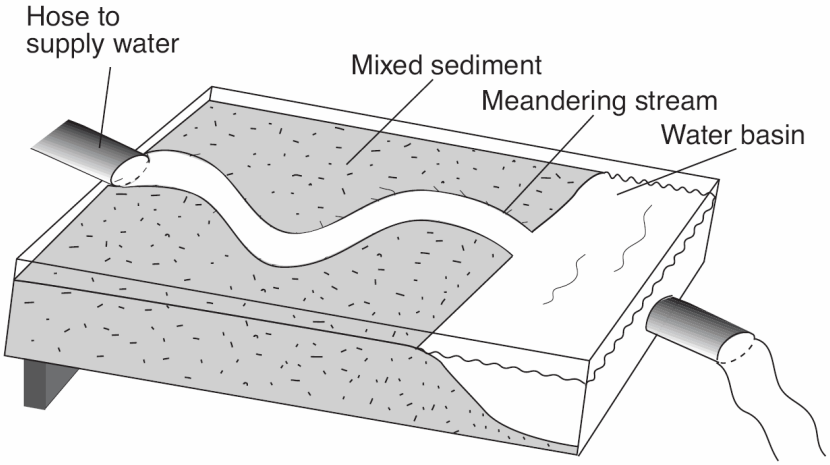
____ 91. Base your answer to the following question on the block diagram below, which shows some of the landscape features formed as the most recent continental glacier melted and retreated across western New York State.



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

A) age of the glacier
B) direction of glacial movement
C) thickness of the glacial ice
D) rate of glacial movement

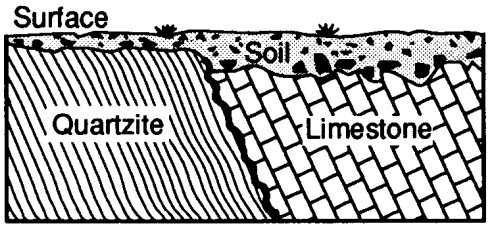
____ 92. Base your answer to the following question on the diagram below, which shows a model used to investigate the erosional-depositional system of a stream. The model was tilted to create a gentle slope, and a hose supplied water to form the meandering stream shown.



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

A) decrease the temperature of the sediment
B) decrease the slope
C) increase the size of the sediment
D) increase the rate of the water flow

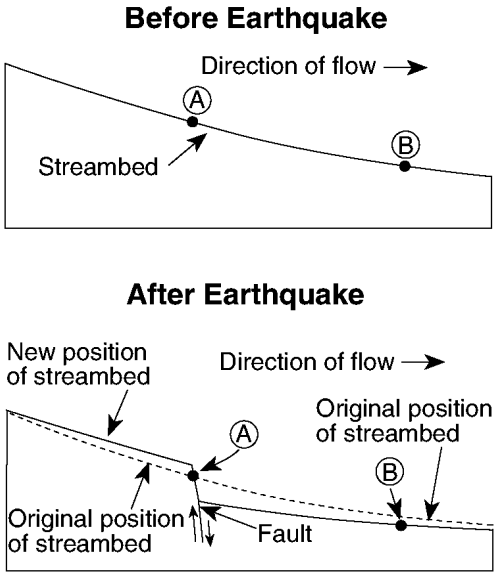
____ 93. The cross section below shows residual soils that developed on rock outcrops of metamorphic quartzite and sedimentary limestone.



Which statement best explains why the soil is thicker above the limestone than it is above the quartzite?

A) The quartzite formed from molten magma.
B) The limestone is thicker than the quartzite.
C) The quartzite is older than the limestone.
D) The limestone is less resistant to weathering than the quartzite.

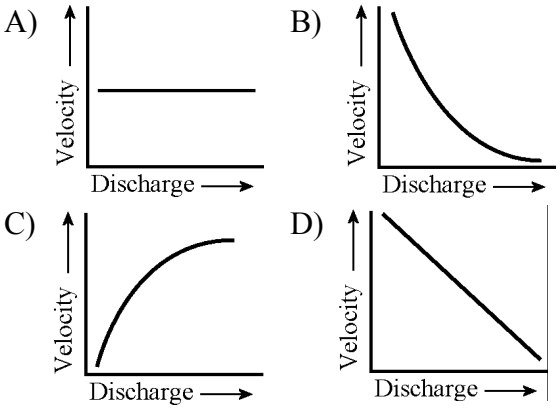
____ 94. The diagram below shows a stream profile before and after an earthquake. Points *A* and *B* are locations along the streambed.



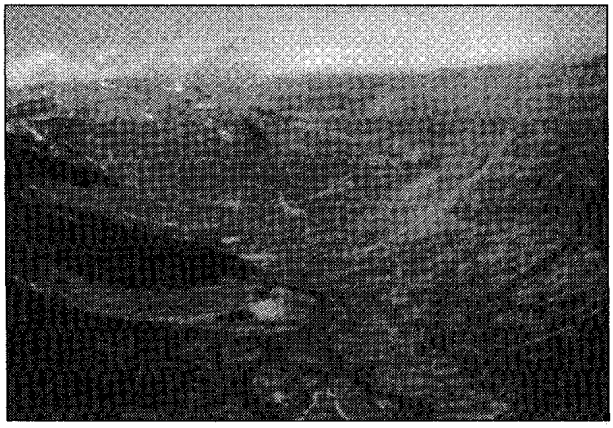
What is the probable relationship between erosion and deposition at points *A* and *B* after the earthquake?

A) There is more deposition at point *A* and more erosion at point *B*.
B) There is more erosion at point *A* and more deposition at point *B*.
C) There is more deposition than erosion at points *A* and *B*.
D) There is more erosion than deposition at points *A* and *B*.

____ 95. Stream velocity and stream discharge were recorded continuously at the same location in a stream channel. Which graph best shows the relationship between stream velocity and stream discharge at this location?



____ 96. The photograph below shows a valley.



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

A) wave action
B) moving ice
C) blowing wind
D) flowing water

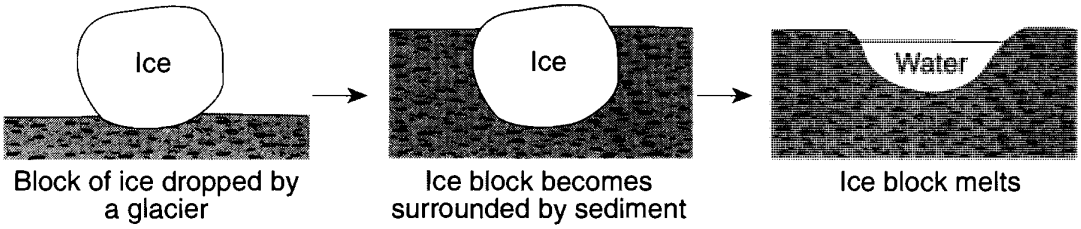
____ 97. A sedimentary deposit produced by wind erosion is most likely composed of

A) sorted fine-grained particles in cross-bedded layers
B) a range of particle sizes from 1.0 to 10.0 cm in diameter in thick layers
C) flat, angular boulders in unsorted piles
D) shells of varying size, shape, and composition in isolated mounds

____ 98. Unsorted, angular, rough-surfaced cobbles and boulders are found at the base of a cliff. What most likely transported these cobbles and boulders?

A) running water
B) wind
C) gravity
D) ocean currents

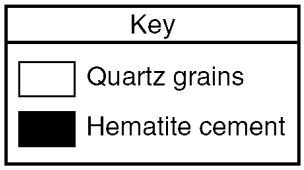
____ 99. The diagram below shows a glacial landscape feature forming over time from a melting block of ice.

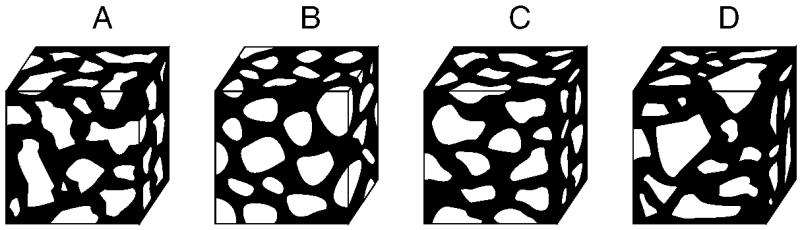


This glacial landscape feature is best identified as

A) a kettle lake
B) an outwash plain
C) a finger lake
D) a moraine

____ 100. The diagram below shows four magnified block-shaped sandstone samples labeled *A, B, C,* and *D.* Each sandstone sample contains quartz grains of different shapes and sizes. The quartz grains are held together by hematite cement.



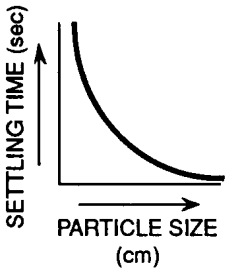


In which sample did the quartz grains undergo the most abrasion during erosional transport?

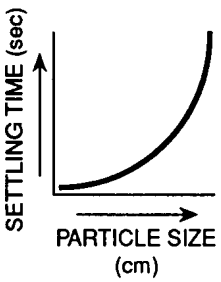
A) *A*
B) *B*
C) *C*
D) *D*

____ 101 A sample of rounded quartz sediments of different particle sizes is dropped into a container of water. Which graph best shows the settling time for these particles?

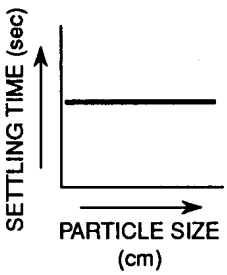
A)



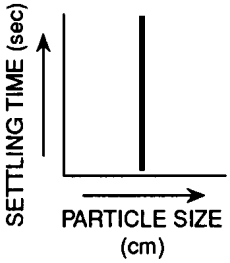
B)



C)



D)



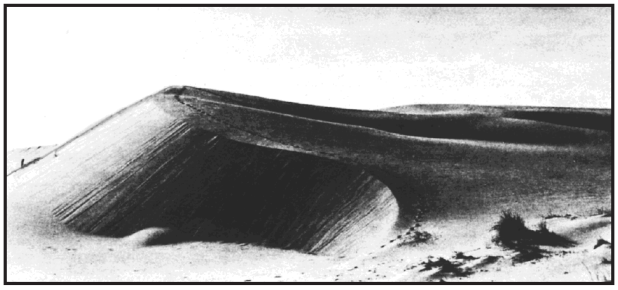
____ 102 A stream's velocity decreases from 100 cm/s to 5cm/s. Which size sediment particles will still be transported by the stream?

A) pebbles, sand, silt, and clay
B) sand, silt, and clay, only
C) silt and clay, only
D) clay, only

____ 103. Which factors most directly control the development of soils?

A) soil particle sizes and method of deposition
B) bedrock composition and climate characteristics
C) direction of prevailing winds and storm tracks
D) earthquake intensity and volcanic activity

____ 104. The photograph below shows a sand dune that formed in a coastal area.



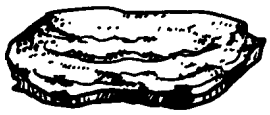
This sand dune was most likely formed by

A) water flowing from the left
B) water flowing from the right
C) wind blowing from the left
D) wind blowing from the right

____ 105. Which event is an example of chemical weathering?

A) rocks falling off the face of a steep cliff
B) feldspar in granite being crushed into clay-sized particles
C) water freezing in cracks in a roadside outcrop
D) acid rain reacting with limestone bedrock

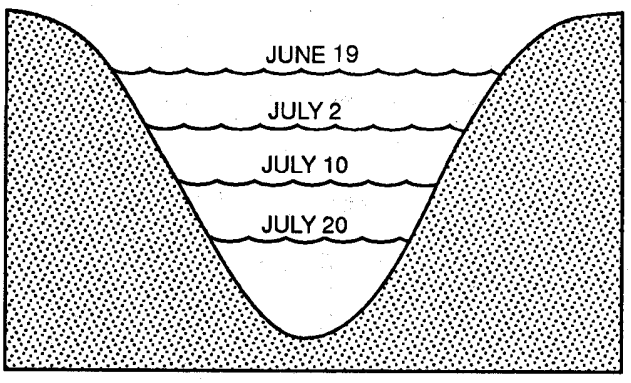
____ 106. Which quartz sample has probably undergone abrasion in a stream for the longest period of time?

A) 
B) 
C) 
D) 

____ 107. Which geologic feature is caused primarily by chemical weathering?

A) large caves in limestone bedrock
B) a pattern of parallel cracks in a granite mountain
C) blocks of basalt at the base of a steep slope
D) the smooth, polished surface of a rock in a dry, sandy area

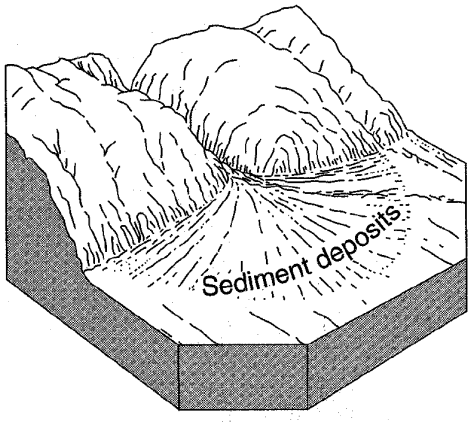
____ 108. The diagram below shows the cross section of a stream channel and the height of the stream surface on various dates of the year.



The stream's velocity from June 19 to July 20 at this section of the stream most likely

A) decreased, only
B) decreased, then increased
C) increased, only
D) remained constant

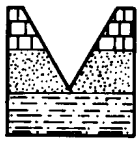
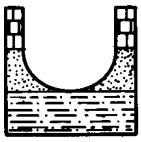
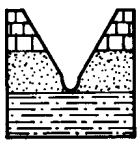
____ 109. The landscape diagram below shows a fan-shaped pattern of sediment deposits.



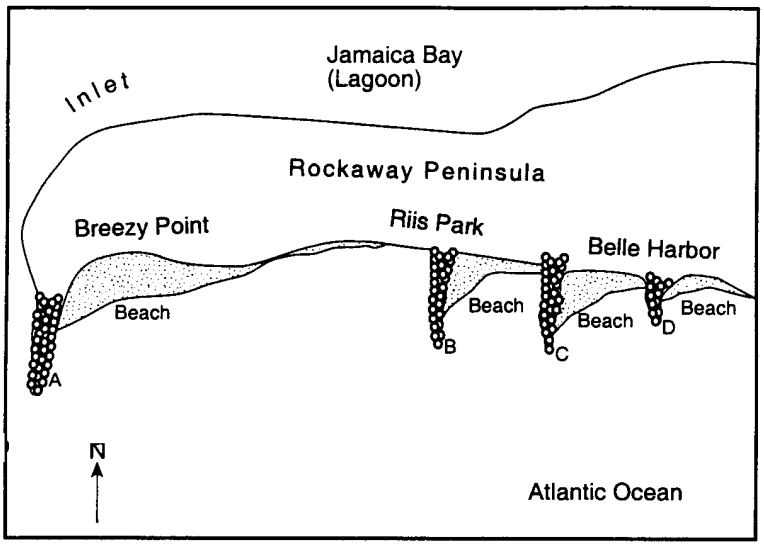
The fan-shaped pattern of these sediments is most likely the result of deposition by

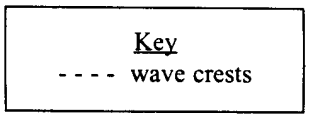
A) glacial ice
B) ocean waves
C) running water
D) prevailing winds

____ 110. Which diagram best represents a cross section of a valley which was glaciated and then eroded by a stream?

A) 
B) 
C) 
D) 

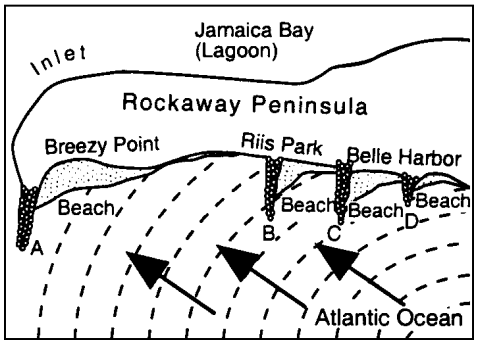
____ 111. The map below shows Rockaway Peninsula, part of Long Island's south shore, and the location of several stone barriers, *A*, *B*, *C*, and *D*, that were built to trap sand being transported along the coast by wave action.



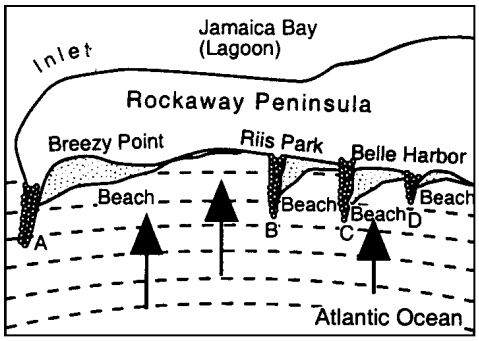


On which map do the arrows best show the direction of wave movement that created the beaches in this area?

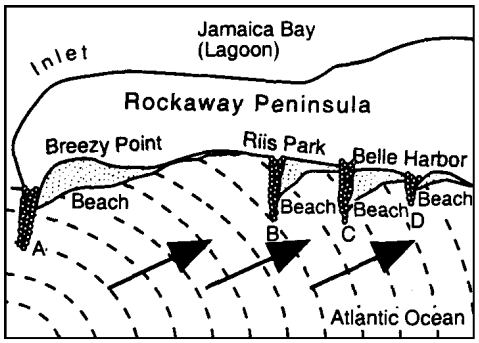
A)



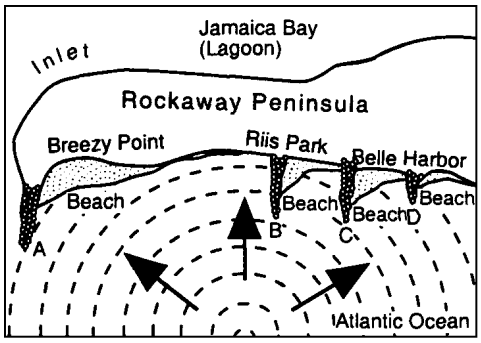
B)



C)



D)



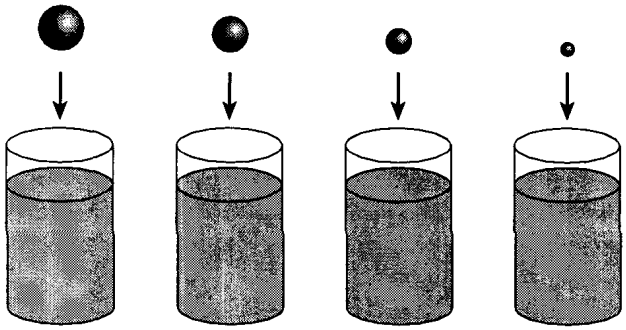
____ 112. Which energy transformation occurs as a rock falls freely from the top of a vertical cliff?

A) The rock's potential energy and kinetic energy decrease.
B) The rock's potential energy decreases and the rock's kinetic energy increases.
C) The rock's potential energy increases and the rock's kinetic energy decreases.
D) The rock's potential energy and kinetic energy increase.

____ 113. The greater the time that stream sediment is transported, the greater the probability that the sediment will become more

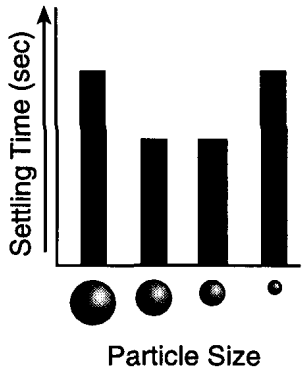
A) angular and smaller
B) angular and larger
C) rounded and smaller
D) rounded and larger

____ 114. The diagram below shows four identical columns containing the same amount of water. Four different-sized spherical particles, made of the same uniform material, are dropped into the columns and settle to the bottom.

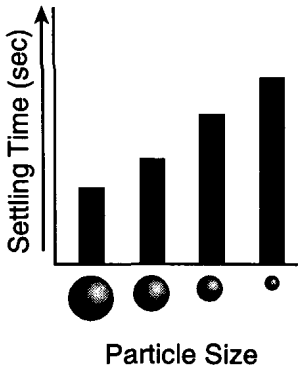


Which graph best shows the relative settling times of the four particles?

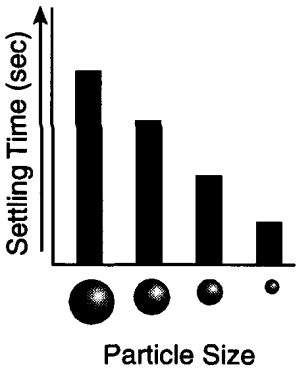
A)



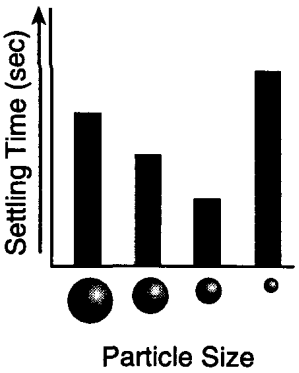
B)



C)



D)



____ 115. 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?

A) *A* B) *B* C) *C* D) *D*

____ 116. Two streams begin at the same elevation and have equal volumes. Which statement best explains why one stream could be flowing faster than the other stream?

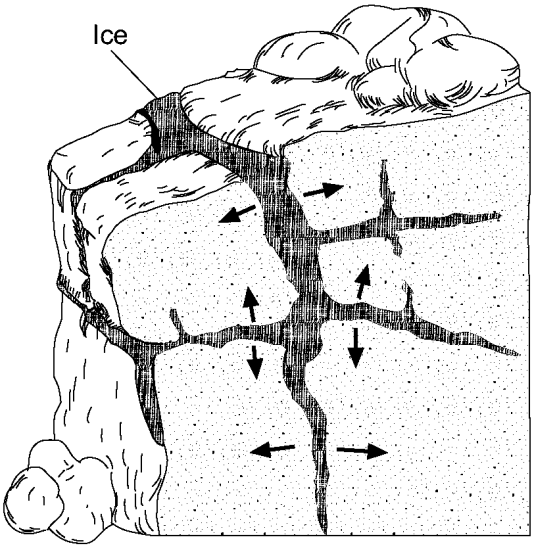
A) The faster stream contains more dissolved minerals.

B) The faster stream has a much steeper gradient.

C) The streams are flowing in different directions.

D) The faster stream has a temperature of 10°C, and the slower stream has a temperature of 20°C.

____ 117. The diagram below shows granite bedrock with cracks. Water has seeped into the cracks and frozen. The arrows represent the directions in which the cracks have widened due to weathering.



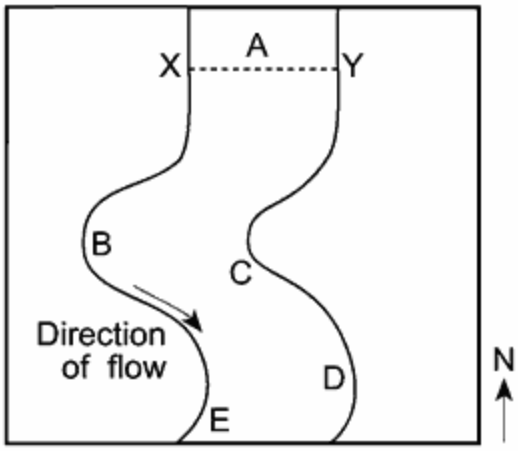
Which statement best describes the physical weathering shown by the diagram?

A) Enlargement of the cracks occurs because water expands when it freezes.
B) This type of weathering occurs only in bedrock composed of granite.
C) The cracks become wider because of chemical reactions between water and the rock.
D) This type of weathering is common in regions of primarily warm and humid climates.

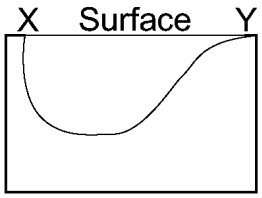
____ 118. What is the best evidence that a glacial erratic has been transported?

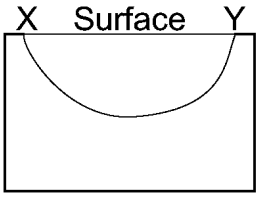
A) It is located at a high elevation in a mountainous area.
B) It is less than 25 centimeters in diameter.
C) Its composition is different from that of the bedrock under it.
D) It appears to have been intensely metamorphosed.

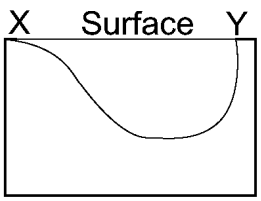
____ 119. Base your answer to the following question on the map below, which shows a portion of a stream that flows southward. Letters *A* through *E* represent locations in the stream. Line *XY* is the location of a cross section.

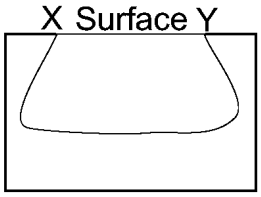


Which cross section along line *XY* best represents the shape of the stream bottom?

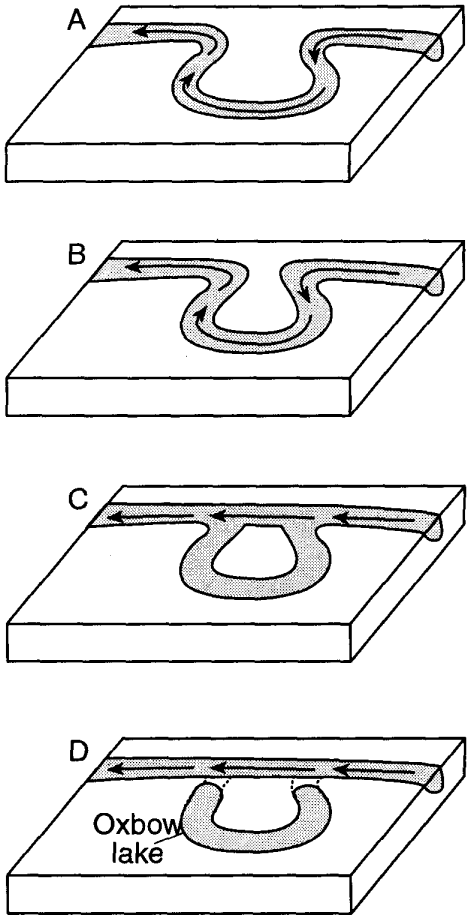
A)


B)


C)


D)


____ 120. The diagrams below show the stages, *A* through *D*, in the formation of an oxbow lake over a period of time. [The arrows indicate the direction of streamflow.]



Oxbow lakes are generally formed by

A) erosion, resulting in a sudden increase in the stream's gradient
B) deposition, resulting in a sudden increase in the stream's gradient
C) erosion along the outside banks of the curve in a meandering stream
D) deposition along the outside banks of the curve in a meandering stream