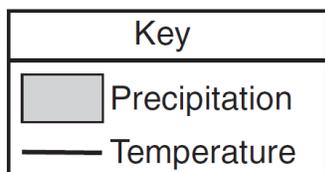
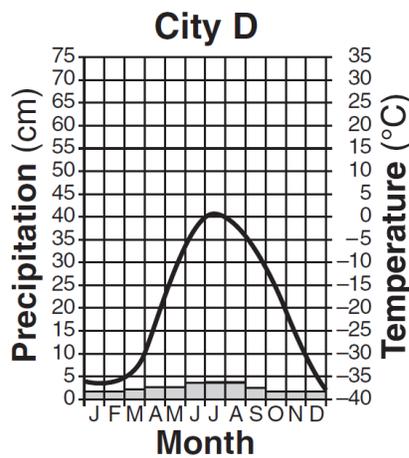
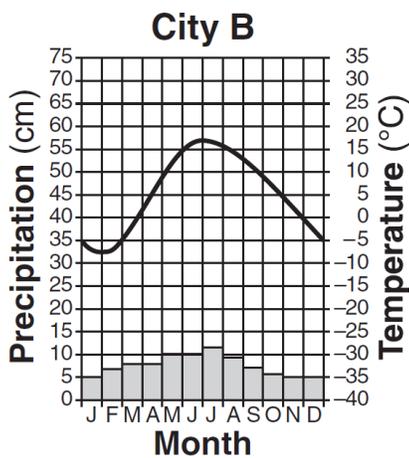
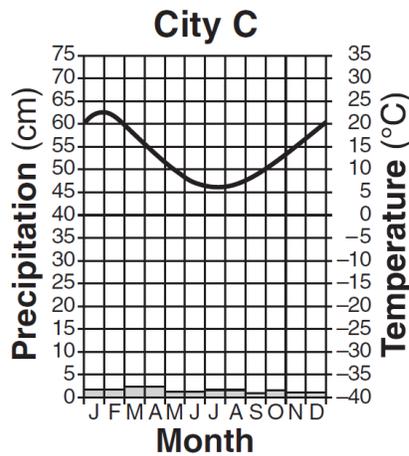
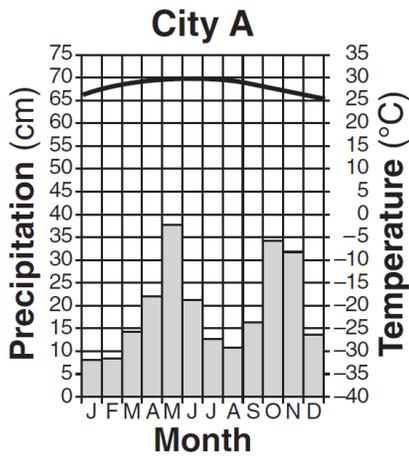


1. Which combination of climate factors generally results in the coldest temperatures?

- A) low elevation and low latitude
- B) low elevation and high latitude
- C) high elevation and low latitude
- D) high elevation and high latitude

Base your answers to questions 2 through 5 on the climate graphs below, which show average monthly precipitation and temperatures at four cities, A, B, C, and D.

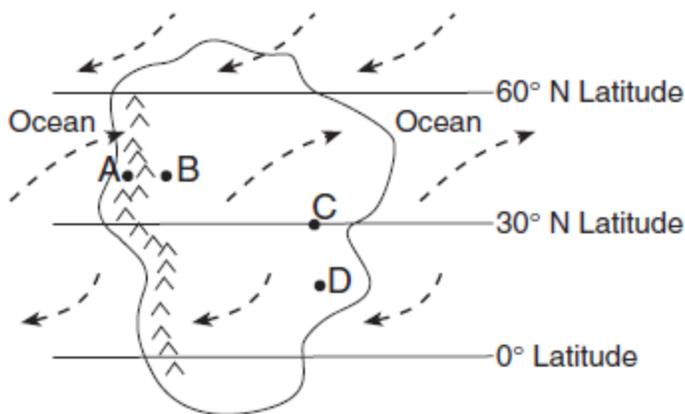


2. Very little water will infiltrate the soil around city D because the region usually has

- A) a frozen surface
- B) nearly flat surfaces
- C) a small amount of runoff
- D) permeable soil

3. It can be concluded that city *C* is located in the Southern Hemisphere because city *C* has
 - A) small amounts of precipitation throughout the year
 - B) large amounts of precipitation throughout the year
 - C) its warmest temperatures in January and February
 - D) its warmest temperatures in July and August
4. During which season does city *B* usually experience the month with the highest average precipitation?
 - A) spring
 - B) summer
 - C) fall
 - D) winter
5. City *A* has very little variation in temperature during the year because city *A* is located
 - A) on the dry side of a mountain
 - B) on the wet side of a mountain
 - C) near the center of a large landmass
 - D) near the equator

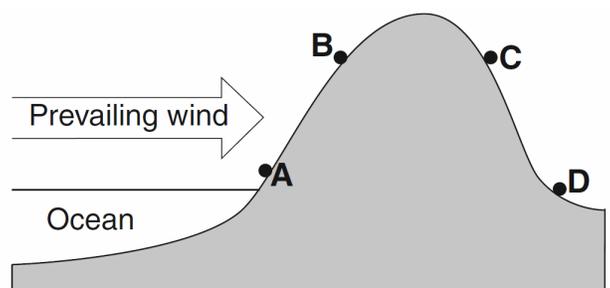
6. Snowfall is rare at the South Pole because the air over the South Pole is usually
 - A) rising and moist
 - B) rising and dry
 - C) sinking and moist
 - D) sinking and dry
7. Base your answer to the following question on the map below, which shows an imaginary continent on Earth. Arrows represent prevailing wind directions. Letters *A* through *D* represent locations on the continent. Locations *A* and *B* are at the same latitude and at the same elevation at the base of the mountains.



The climate at location *C* is much drier than at location *D*. This difference is best explained by the fact that location *C* is located

- A) farther from any mountain range
- B) closer to a large body of water
- C) at a latitude that experiences longer average annual daylight
- D) at a latitude where air is sinking and surface winds diverge

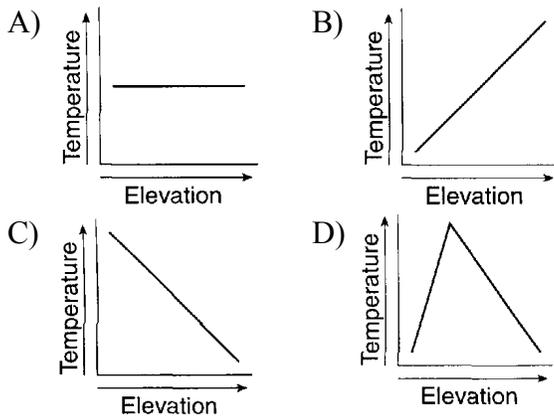
8. Which single factor generally has the greatest effect on the climate of an area on the Earth's surface?
 - A) the distance from the Equator
 - B) the extent of vegetative cover
 - C) the degrees of longitude
 - D) the month of the year
9. Mount Kilimanjaro is located in eastern Africa at 3° S. Which climate factor best explains the presence of permanent snow on its peak?
 - A) latitude
 - B) elevation
 - C) prevailing winds
 - D) ocean currents
10. The cross section below represents four locations on a mountain. The arrow indicates the prevailing wind direction.



Which location has the warmest and most arid climate?

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

11. Which graph best shows the general effect that differences in elevation above sea level have on the average annual temperature?



12. Riverhead, New York, has a smaller average daily temperature range than Elmira, New York, because Riverhead is located

- A) near a large body of water
- B) at a lower latitude
- C) at a higher elevation
- D) near a large city

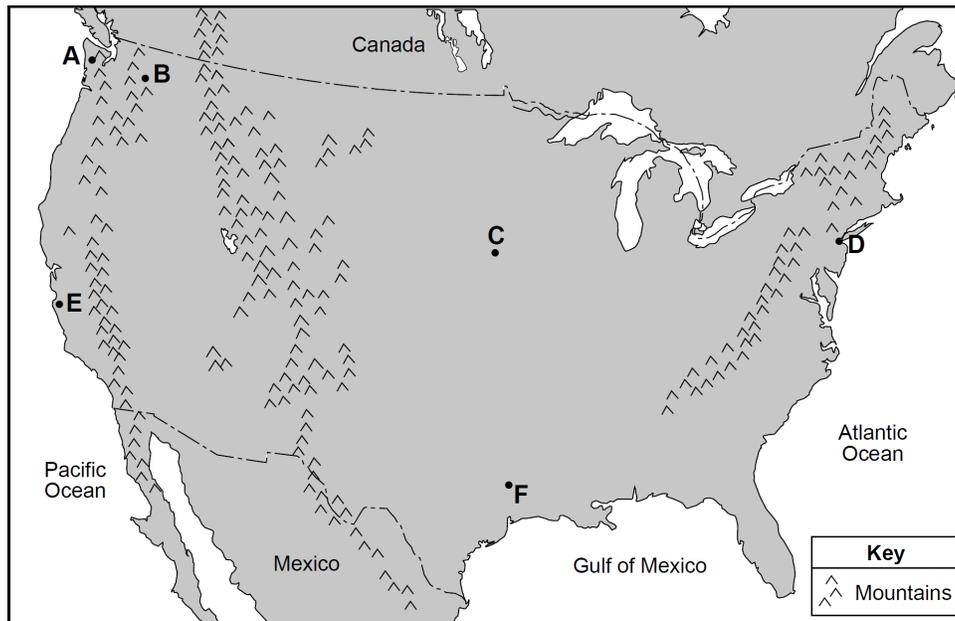
13. Which ocean current brings warm water to the southeastern tip of Africa?

- A) Brazil Current B) Agulhas Current
- C) Guinea Current D) Benguela Current

14. Which New York State location is most often affected by lake-effect snow storms caused by winds blowing over Lake Ontario?

- A) Jamestown B) Plattsburgh
- C) Oswego D) Riverhead

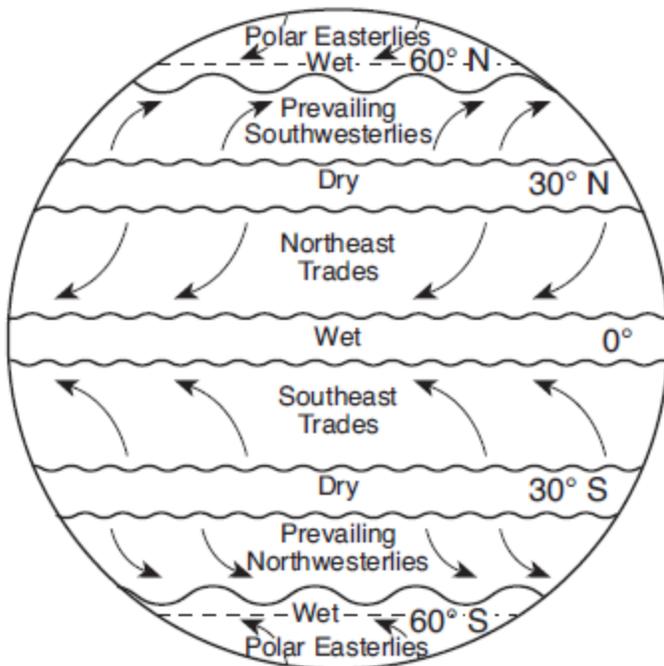
15. Base your answer to the following question on the map below and on your knowledge of Earth science. The map shows the continental United States and parts of Mexico and Canada. Letters *A* through *F* represent surface locations.



Compared to the annual range in temperatures at location *C*, the annual range in temperatures at location *D* will be

- A) less, because *D* is located near a large body of water
 B) less, because *D* is located at a greater longitude
 C) greater, because *D* is located near a large body of water
 D) greater, because *D* is located at a greater longitude
16. The cross section below represents a mountain range. Points *A* and *B* represent locations on Earth's surface.
-
- The diagram shows a cross-section of a mountain range. Point A is on the left slope, and point B is on the right slope. An arrow labeled 'Prevailing wind' points from the left towards the mountain peak.
- Compared to the climate of location *A*, the climate of location *B* is most likely
- A) cooler and wetter B) cooler and drier
 C) warmer and wetter D) warmer and drier
17. The planetary surface winds and air currents near Earth's equator are usually
- A) converging and sinking
 B) diverging and sinking
 C) converging and rising
 D) diverging and rising
18. In which planetary wind belt do most storms move toward the northeast?
- A) 30° N to 60° N B) 0° to 30° N
 C) 0° to 30° S D) 30° S to 60° S

Base your answers to questions 19 through 21 on the map below, which shows Earth's planetary wind belts.

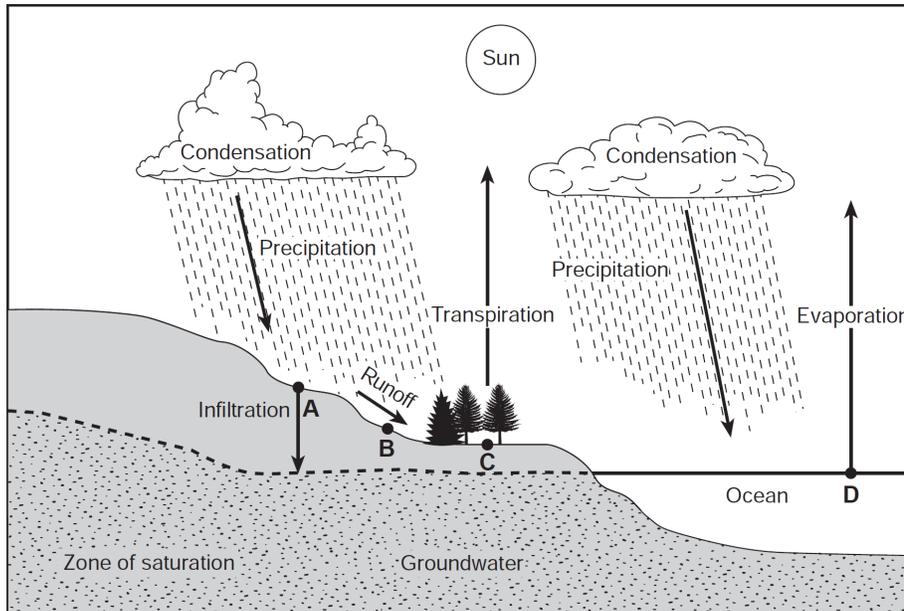


19. Which climatic conditions exist where the trade winds converge?
- A) cool and wet B) cool and dry C) warm and wet D) warm and dry
20. Which wind belt has the greatest effect on the climate of New York State?
- A) prevailing northwesterlies B) prevailing southwesterlies
C) northeast trades D) southeast trades
21. The curving of these planetary winds is the result of
- A) Earth's rotation on its axis
B) the unequal heating of Earth's atmosphere
C) the unequal heating of Earth's surface
D) Earth's gravitational pull on the Moon

Period:

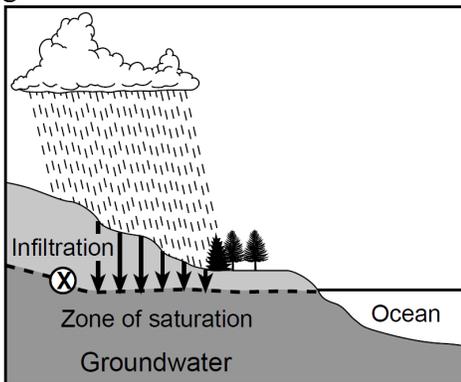
Base your answers to questions 22 through 24 on the cross section below and on your knowledge of Earth science. The cross section represents processes in the water cycle. Arrows represent the movement of water. Letters *A*, *B*, *C*, and *D* represent locations on Earth's surface.

The Water Cycle



22. The greatest amount of transpiration and evaporation will occur most likely when the air temperature is
- A) low and the humidity is low
 - B) low and the humidity is high
 - C) high and the humidity is low
 - D) high and the humidity is high
23. The downward movement of water from location *A* will usually be greatest when the soil is
- A) nonporous and the particles are uniformly small in size
 - B) nonporous and the particles are uniformly large in size
 - C) porous and the particles are uniformly small in size
 - D) porous and the particles are uniformly large in size
24. What would most likely reduce the amount of runoff at location *B*?
- A) infiltration occurring faster than precipitation
 - B) greater condensation than evaporation
 - C) saturated soil below the land surface
 - D) a frozen land surface

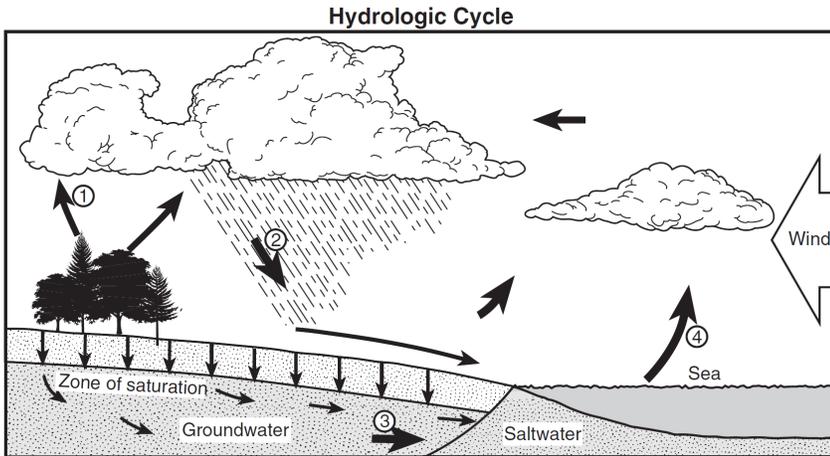
25. The cross section below represents some processes of the water cycle. Arrows represent the infiltration of water. The dashed line labeled *X* represents the uppermost level of Earth material that is saturated by groundwater.



What is indicated by the dashed line labeled *X*?

- A) watershed
 - B) water table
 - C) impermeable bedrock
 - D) impermeable soil
26. Infiltration is generally greater than runoff where the land has a
- A) gentle slope and permeable soil
 - B) gentle slope and impermeable bedrock
 - C) steep slope and permeable soil
 - D) steep slope and impermeable bedrock
27. Which processes are most likely to cause a rise in the water table?
- A) runoff and erosion
 - B) precipitation and infiltration
 - C) deposition and burial
 - D) solidification and condensation
28. During a rainstorm, when soil becomes saturated, the amount of infiltration
- A) decreases and runoff decreases
 - B) decreases and runoff increases
 - C) increases and runoff decreases
 - D) increases and runoff increases
29. Which type of sediment sample normally has the greatest permeability rate?
- A) unsorted pebbles
 - B) unsorted sand
 - C) sorted pebbles
 - D) sorted sand

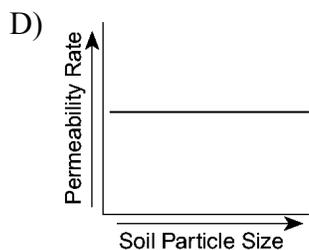
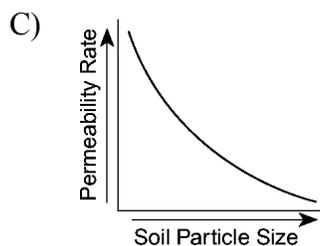
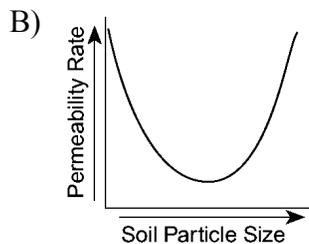
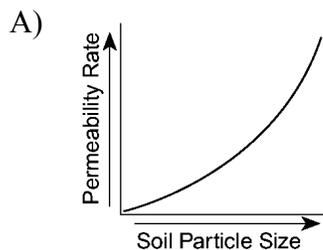
30. Base your answer to the following question on the water cycle diagram shown below. Some arrows are numbered 1 through 4 and represent various processes.



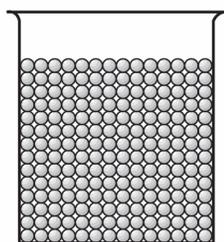
For infiltration to occur, the ground must be

- A) permeable and saturated
- B) permeable and not saturated
- C) impermeable and saturated
- D) impermeable and not saturated

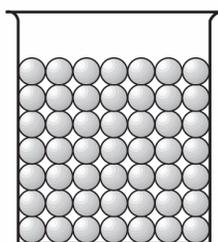
31. Which graph best represents the general relationship between soil particle size and the permeability rate of infiltrating rainwater?



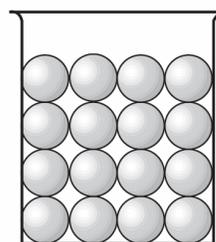
32. The cross sections below represent three beakers that were used to test porosity. Beakers *A*, *B*, and *C* each contain a different size of bead. Each beaker holds an equal volume of beads. The amount of water needed to fill the total pore space between the beads in each beaker was measured.



A



B

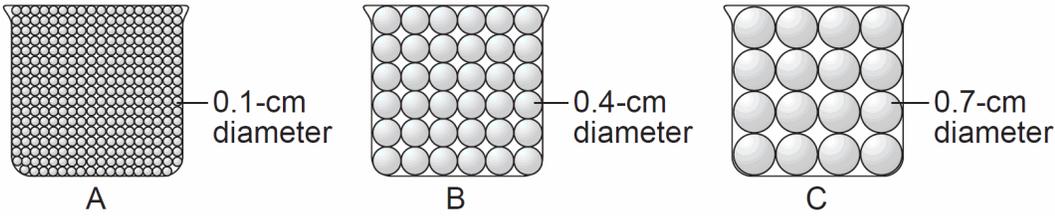


C

Which statement best describes the porosity that was found for these three samples?

- A) *A* had a greater porosity than *B* and *C*. B) *B* had a greater porosity than *A* and *C*.
 C) *C* had a greater porosity than *A* and *B*. D) All three samples had the same porosity.

33. The diagram below represents three identical beakers, *A*, *B*, and *C*, each containing an equal volume of uniform-sized spherical beads. Water is poured into each beaker until all of the pore spaces are filled.



(Not drawn to scale)

Which table best indicates the percentage of pore space compared to the total volume of each beaker?

A)

Beaker	Percentage of Pore Space
A	40
B	40
C	40

B)

Beaker	Percentage of Pore Space
A	60
B	40
C	20

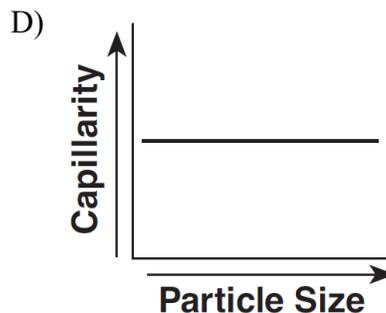
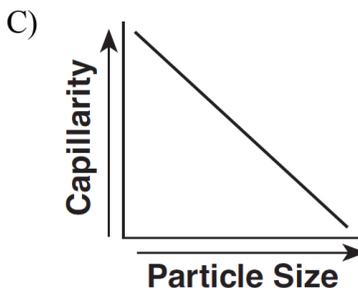
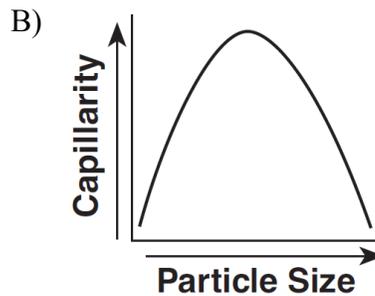
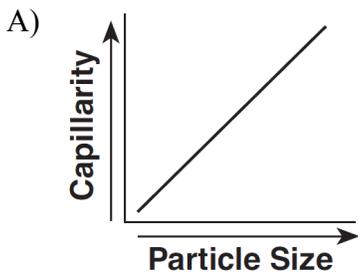
C)

Beaker	Percentage of Pore Space
A	20
B	40
C	60

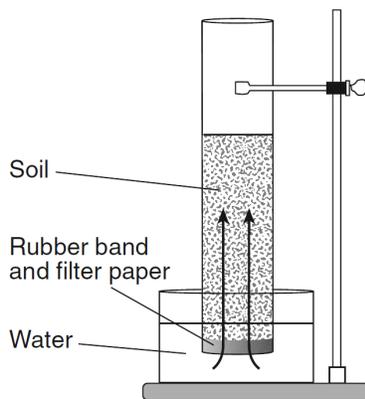
D)

Beaker	Percentage of Pore Space
A	20
B	40
C	20

34. Which graph shows the general relationship between soil particle size and the capillarity of the soil?



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



Data Table

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

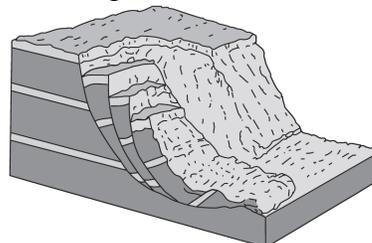
Results of this experiment lead to the conclusion that

- A) capillarity is greater in soils with larger particles
- B) capillarity is greater in soils with smaller particles
- C) permeability is greater in soils with larger particles
- D) permeability is greater in soils with smaller particles

36. Soil composed of which particle size usually has the greatest capillarity?

- A) silt
- B) fine sand
- C) coarse sand
- D) pebbles

37. The block diagram below represents a rapid downslope flow of saturated soil and rock layers.



What are two likely causes of this rapid downslope flow?

- A) groundwater and abrasion
- B) groundwater and gravity
- C) prevailing wind and abrasion
- D) prevailing wind and gravity

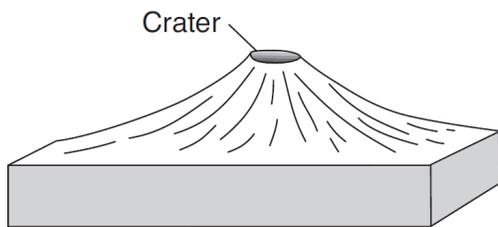
38. Urbanization affects the amount of vegetation and runoff in an area by

- A) decreasing vegetation and decreasing runoff
- B) decreasing vegetation and increasing runoff
- C) increasing vegetation and decreasing runoff
- D) increasing vegetation and increasing runoff

39. During a rainstorm, water is flowing down the side of a hill composed of solid bedrock. What will be the effect on the relative amounts of runoff and infiltration when the water reaches an area of unsaturated soil with a gentler slope?

- A) Runoff will decrease as infiltration decreases.
- B) Runoff will decrease as infiltration increases.
- C) Runoff will increase as infiltration decreases.
- D) Runoff will increase as infiltration increases.

40. The block diagram below shows a volcano.



Which map shows the stream drainage pattern that most likely formed on the surface of this volcano?

