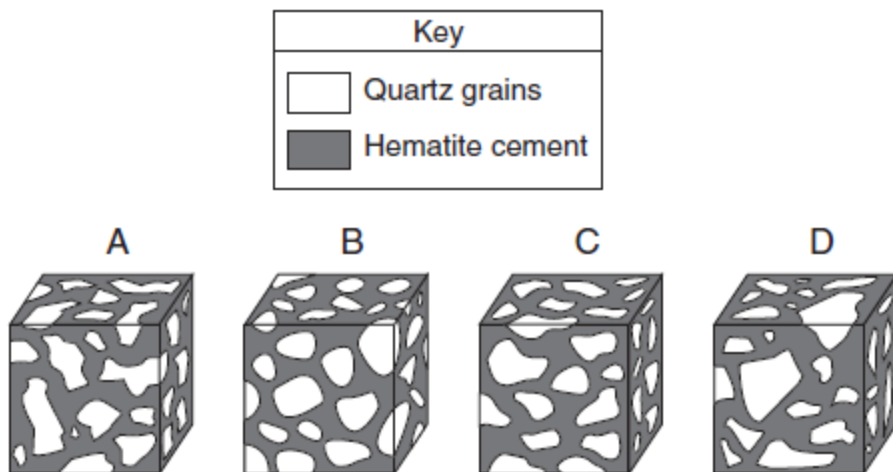


# Weathering HW

Name \_\_\_\_\_

1. 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.



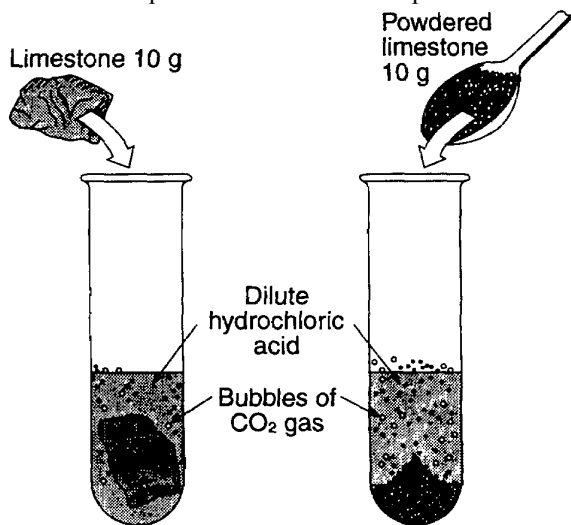
In which sample did the quartz grains undergo the most abrasion during erosional transport?

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

2. Water is a major agent of chemical weathering because water

- A) cools the surroundings when it evaporates
- B) dissolves many of the minerals that make up rocks
- C) has a density of about one gram per cubic centimeter
- D) has the highest specific heat of all common earth materials

3. 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

4. Which rock weathers most rapidly when exposed to acid rain?

- A) quartzite                      B) granite
- C) basalt                          D) limestone

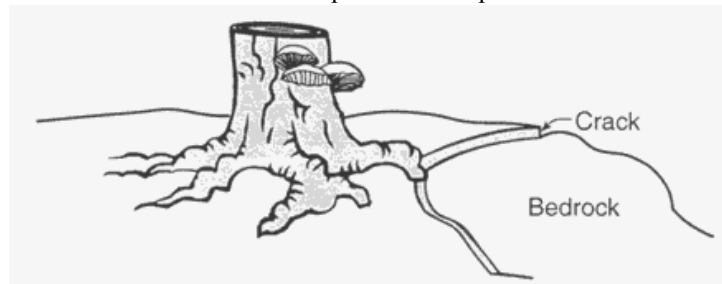
5. Which characteristic would most likely remain constant when a limestone cobble is subjected to extensive abrasion?

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

6. Which property of water makes frost action a common and effective form of weathering?

- A) Water dissolves many earth materials.
- B) Water expands when it freezes.
- C) Water cools the surroundings when it evaporates.
- D) Water loses 334 Joules of heat per gram when it freezes.

7. 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

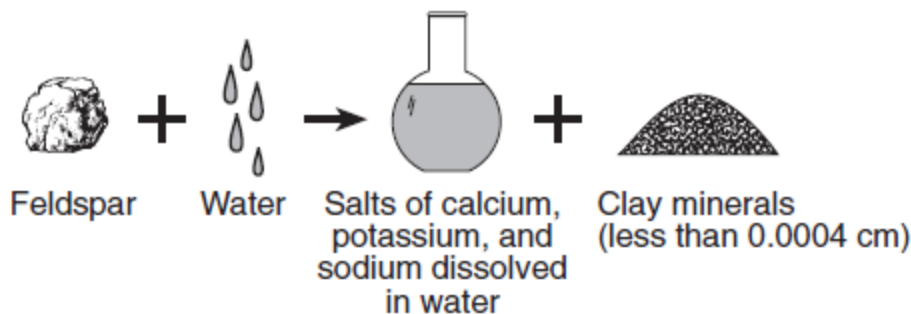
- A) chemical weathering                      B) deposition
- C) erosion                                      D) physical weathering

8. Landscapes will undergo the most chemical weathering if the climate is

- A) cool and dry                                  B) cool and wet
- C) warm and dry                                D) warm and wet

## Weathering HW

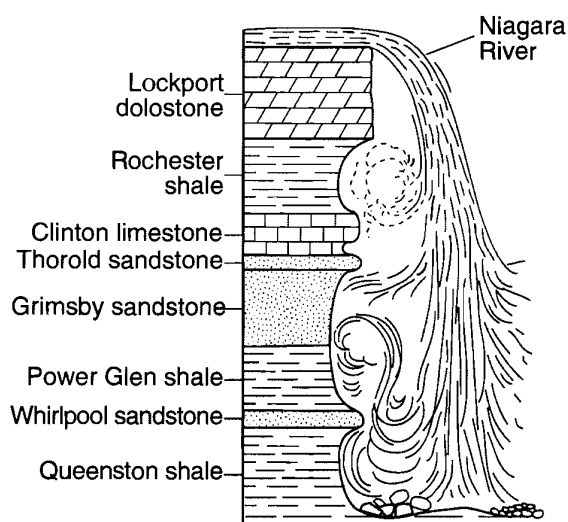
9. The diagram below represents a naturally occurring geologic process.



Which process is best illustrated by the diagram?

- A) cementation      B) erosion      C) metamorphism      D) weathering

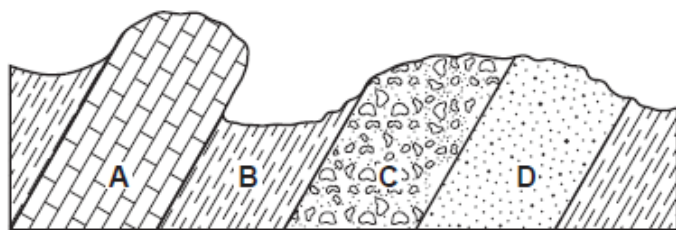
10. The generalized cross section below shows the sedimentary rock layers at Niagara Falls in western New York State.



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

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

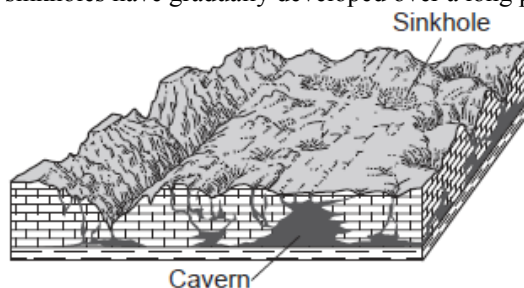
11. The cross section below represents an outcrop of sedimentary rock layers exposed on Earth's surface. Rock layers A, B, C, and D are labeled.



Which rock layer shows the greatest resistance to weathering and erosion?

- A) A      B) B      C) C      D) D

12. The block diagram below represents a landscape where caverns and sinkholes have gradually developed over a long period of time.

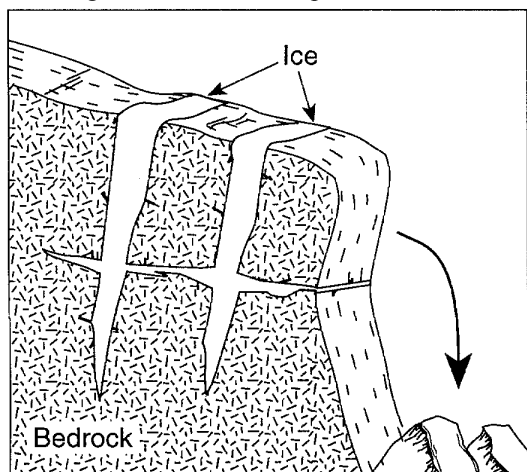


Why did these caverns and sinkholes form?

- A) The bedrock chemically reacted with acidic groundwater.  
B) This type of bedrock contained large amounts of oxygen and silicon.  
C) Glacial deposits altered the shape of the bedrock.  
D) Crustal uplift formed gaps in the bedrock.
13. Rock samples brought back from the Moon show absolutely no evidence of chemical weathering. This is most likely due to
- A) the lack of an atmosphere on the Moon  
B) extremely low surface temperatures on the Moon  
C) lack of biological activity on the Moon  
D) large quantities of water in the lunar "seas"
14. What occurs when a rock is crushed into a pile of fragments?
- A) The total surface area decreases and chemical composition changes.  
B) The total surface area decreases and chemical composition remains the same.  
C) The total surface area increases and chemical composition changes.  
D) The total surface area increases and chemical composition remains the same.

## Weathering HW

15. The diagram below shows a process called frost wedging.



Frost wedging is an example of

- A) weathering
- B) cementing
- C) metamorphism
- D) deposition

16. The photograph below shows a steep-sided rock formation that is over 100 meters high. This landscape feature is located in an arid region.



What would happen to this landscape feature if the climate became more humid?

- A) less weathering and erosion, producing a more rounded landscape feature
- B) less weathering and erosion, producing a more angular landscape feature
- C) more weathering and erosion, producing a more rounded landscape feature
- D) more weathering and erosion, producing a more angular landscape feature