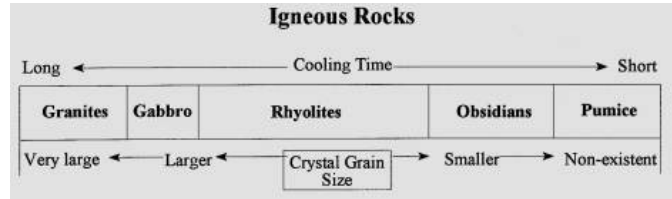


Name: \_\_\_\_\_

Date: \_\_\_\_\_

8thT4

1) Refer to the following diagram to answer the question below.  
Pumice would contain crystals of what size?



- A. larger to smaller
- B. larger to non-existent
- C. non-existent
- D. smaller to non-existent
- E. very large to larger

2) If you found a rock with very large crystal grain, what type of rock would it be?

- A. Gabbro
- B. Granite
- C. Obsidian
- D. Pumice
- E. Rhyolite

3) Sam made the above key while studying rocks. Use it to help decide what type of rock is described below. This rock has particles stuck together, is glassy and shiny. According to Sam's key it is:

|             | Shiny | Air holes | Flat layers | Fossils | Particles stuck together | Glassy | Crystals |
|-------------|-------|-----------|-------------|---------|--------------------------|--------|----------|
| Metamorphic | X     |           | X           | X       |                          |        | X        |
| Igneous     | X     | X         |             |         | X                        | X      | X        |
| Sedimentary |       |           | X           | X       | X                        |        | X        |
| Mineral     | X     |           |             |         |                          | X      | X        |

- A. metamorphic
- B. igneous
- C. sedimentary
- D. mineral

4) A rock has flat layers, fossils, and is shiny. According to Sam's key it is:

- A. metamorphic
- B. igneous
- C. sedimentary
- D. mineral

5) A rock has particles stuck together, has crystals, and has flat layers. According to Sam's key it is:

- A. sedimentary
- B. mineral
- C. metamorphic
- D. igneous

6) When a light bulb is turned on, energy changes from one form to another. Which of the following **best** describes this change?

- A. sound energy to light energy
- B. nuclear energy to light energy
- C. electrical energy to light energy
- D. magnetic energy to light energy

7) Minerals that break along smooth, flat surfaces have

- A. cleavage
- B. hardness
- C. fracture
- D. metallic luster

8) A rock has three minerals in it. One of them, quartz, has a hardness of 7. The second, feldspar, has a hardness of 4. The third, biotite, has a hardness of 2.5. What is true about the hardness of rock?

- A. The hardness is 13.5, because that is the total hardness of the rock
- B. The hardness is 4.4, because that is the average of the hardness of the minerals in the
- C. The hardness of the rock varies because each of the minerals has a different hardness
- D. The hardness is 2.5, because that is the hardness of the softest mineral

9) If you found an igneous rock with large crystals, what would the crystals tell you about how that rock was formed?

- A. Cooled quickly above the surface
- B. Cooled quickly below the surface
- C. Cooled slowly above the surface
- D. Cooled slowly below the surface
- E. Cooled partially exposed

10) Which event would most likely produce igneous rocks?

- A. deposition
- B. earthquake
- C. flood
- D. volcano

11) Which type of erosion moves the most sediment on the earth's surface?

- A. Glaciers
- B. Landslides
- C. Water
- D. Wind

12) What two rock types are formed by the transfer of heat?

- A. igneous and sedimentary rock
- B. sedimentary and metamorphic rocks
- C. metamorphic and igneous rocks
- D. sedimentary rocks only

13) The four pictures show how a pond changed from 1900 to 2000. Which of the following processes was **most directly** responsible for the changes that occurred in the pond environment?

- A. freezing
- B. evaporation
- C. sediment deposition
- D. chemical weathering

14) Which of the following is a way people try to control the affect of gravity on Earth materials?

- A. building retaining walls to stop soil from sliding downwards
- B. designing bridges to span wide rivers during floods
- C. finding new ways to construct airplanes for transportation
- D. constructing roads that go around hills, not over them.

15) What processes would reverse the path and turn a metamorphic rock into a sedimentary rock?

- A. heat and pressure
- B. weathering and deposition
- C. cooling and melting
- D. pressure and compaction

16) Which assumption must scientists make about the rock cycle?

- A. rocks in ancient times weathered, eroded and deposited as they do today.
- B. rocks are formed in Earth's center and rise to the crust to form the soil
- C. igneous rocks form in volcanoes and then erode to form metamorphic rocks.
- D. metamorphic rocks cannot change into other rocks because they are already changed.

17) Which of the following areas is **most likely** to form metamorphic rocks such as gneiss and schist?

- A. a sea floor
- B. a windblown desert
- C. a site deep underground
- D. a site covered by a glacier

18) Which statement best summarizes the rock cycle?

- A. Rocks are all made of the same materials
- B. Rocks can be different types at the same time
- C. Rocks are unchangeable
- D. Rocks can change from one form to another

19) Why did the eruption in Vesuvius hundreds of years ago kill many more people than the eruption on Mt. St. Helens in recent times?

- A. People living near Vesuvius did not listen to the warnings of scientists.
- B. The eruption at Vesuvius was on a different continent than Mt. St. Helens.
- C. Mt. St. Helens occurred in an area where many people lived.
- D. Scientists know more about the rock cycle and make better predictions.

20) What term describes the breakdown of rocks into smaller and smaller parts?

- A. Erosion
- B. Deposition
- C. Weathering
- D. Cementation

21) Which of the following is an example of chemical weathering?

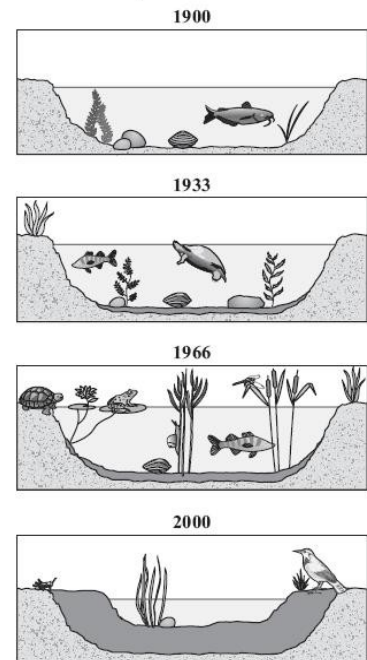
- A. When a bicycle is left outdoors and rusts
- B. When water freezes and breaks open rocks
- C. When a plant wedges into a rock and breaks it
- D. When wind wears away at a rock
- E. When a tombstone freezes, cracks and breaks

22) How does vegetation control water erosion due to runoff?

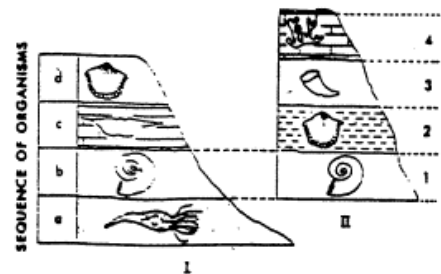
- A. They make the soil harder and more resistant
- B. They stop the rain from reaching the soil
- C. They absorb the rain so it doesn't react with the soil
- D. Their roots hold the soil in place
- E. Their stems grow high to avoid lower runoff

23) How does a scientific understanding of the slow speed of formation of soil from rock help farmers?

- A. they know their soil needs to be protected from erosion.
- B. they know how to produce new soil from bedrock.
- C. they can use fertilizer to make the soil grow more crops.
- D. they use plants that have small root systems to use less soil.

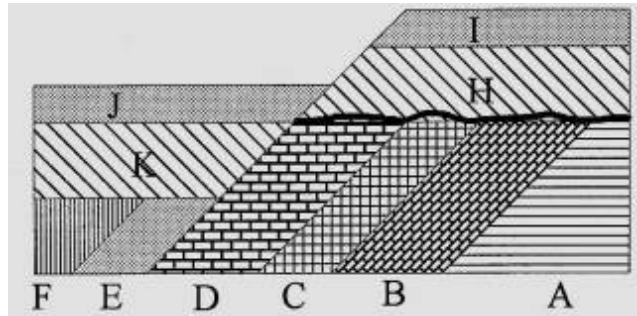


- 24) What events must be happening for rock to cycle from igneous to metamorphic?  
 A. melting, cooling, re-crystallization  
 B. weathering, erosion, deposition, mineral cement  
 C. burial, heat, pressure  
 D. erosion, heat, melting
- 25) What term describes the breakdown of rocks into smaller parts?  
 A. erosion  
 B. sedimentation  
 C. weathering  
 D. wind
- 26) Glaciers have been a dynamic force in shaping the surface of the earth. What physical features would you find in an area that had been eroded by glaciers?  
 A. dunes, worn rocks, loess  
 B. landslides, mudflows, soil creep  
 C. u-shaped valleys, till, kettle lakes  
 D. terraces, beaches, sandbars
- 27) A family wishes to build a house on a steep hillside. They call a geologist to ask if this is a good idea. What will the geologist suggest to the family?  
 A. windstorms will affect the house and yard.  
 B. the hillside may erode and damage the property.  
 C. it will be difficult to grow plants on the steep hillside.  
 D. earthquakes are more likely on steep hillsides
- 28) What evidence do scientists have that supports the idea that Earth's surface has changed over time?  
 A. fossils of rainforest plants in areas that are deserts today.  
 B. rocks that came from outer space  
 C. modern plants and animals that look like ancient organisms.  
 D. climates in some places on Earth that are different than other places.
- 29) For the next item use the above diagram. This diagram shows sedimentary rock layers and certain organisms found in them. The layers marked I were found in one area and those in II were found a number of miles away. The letters a-d and 1-4 refer to the different strata. Providing no geological shifts have taken place, the organism in  
 A. strata a is the oldest  
 B. strata d is the simplest  
 C. strata d is the oldest  
 D. strata a is the simplest
- 30) See the question above. What is the evidence that these are sedimentary rocks?  
 A. they contain shells  
 B. they are in layers  
 C. both I and II contain the same formations  
 D. neither section contains plant fossils
- 31) What strata in locality II might be continuous with strata d in locality I?  
 A. strata 4  
 B. strata 3  
 C. strata 2  
 D. none of these
- 32) Igneous rock was embedded in sedimentary rock, which also contained a fossil fish. The age of the igneous rock was determined to be 350 million years. The igneous rock was deposited there in molten condition. How old is the fossil fish?  
 A. Less than 350 million years old  
 B. At least 350 million years old  
 C. Much older than 350 million years  
 D. Its age cannot be predicted from this data
- 33) Which of the following best describes how volcanoes transfer energy?  
 A. Heat and mechanical energy are transferred as magma flows from a volcano.  
 B. Volcanoes gather heat from the sun and give it off as light and sound.  
 C. Volcanoes carry heat from the surface to the deep interior of Earth.  
 D. Magma produced by a volcano can carry heat but not energy.
- 34) On a mountaintop, you find rock samples that have large crystals and are heavy and dense. These rocks probably:  
 A. cooled underground and were then thrust up  
 B. formed in quiet waters and were thrust up  
 C. were compressed together and thrust up  
 D. cooled quickly after a violent volcanic eruption  
 E. were cemented together with chemicals on top of the mountain



- 35) Radioactive dating technology allowed scientists to find the age of rocks. How did this influence our understanding of Earth history?
- Scientists found out that Earth's core was younger than the crust.
  - Scientists discovered that rocks are about the same age.
  - Scientists confirmed that rock layers are youngest on the top.
  - Scientists discovered that fossil age does not match the age of rocks.

- 36) A researcher found shark fossils on top of a mountain. This evidence suggests which of the following about this region?
- It was once below a waterfall.
  - It was once part of a riverbed.
  - It was once covered by an ocean.
  - It was once near a freshwater lake.
- 37) Use this diagram of a road cut to answer the following question. What event happened at the area labeled by the heavy black line?

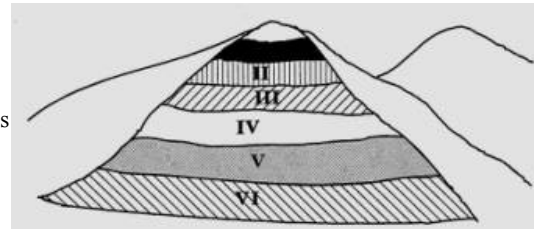


- erosion
  - an earthquake
  - folding
  - a volcano
- 38) What event created the offset of layers J and I?
- erosion
  - an earthquake
  - folding
  - a volcano

- 39) Scientists collected fossils long before they knew the ages and relationships of one ancient organism to another. What additional knowledge was needed to form the modern view of prehistoric Earth history?
- A way to date the age of the rocks that the fossils were found in.
  - A book to explain the way Earth formed and life developed.
  - A collection of the types of rocks found in the rock cycle.
  - A key to name the types of animals found in ancient times.

- 40) The next item refers to the following drawing of a hillside that was excavated for a highway. The six layers of rock show no evidence that they have been disturbed or rearranged by earth movements. Geologists assume that the oldest layer is:

- VI
- IV
- II
- I



- 41) Shark teeth, many fossil sand dollars, and starfish are found in layer IV. This is a good indication that:
- Layer IV was on the shore of a large lake
  - Layer IV was deposited in an ocean basin
  - Shifting of layers occurred as the layers were deposited
  - A food chain was established during this period

- 42) Which two of the above samples would most likely help scientists learn about conditions below the surface of the earth as rocks formed?
- A and D
  - B and C
  - A and B
  - C and D



Fossil:  
Trilobite  
A



Igneous:  
Granite  
B



Metamorphic:  
Gneiss  
C



Mineral Crystal:  
Gypsum  
D

- 43) Which of the following is NOT a feature formed by glaciers during the last ice age?
- sand dunes
  - moraines
  - cirques
  - outwash plains
- 44) Which is the **most** reasonable conclusion when fossils of two different types of organisms are found in the same layers of rock?
- One must be a predator and the other prey
  - One was the ancestor of the other
  - Both have similar behaviors.
  - Both lived at the same time.
- 45) What evidence do we see that energy from the earth's interior has reached the surface?
- large trees
  - volcanoes and earthquakes
  - the grand canyon
  - the global winds
- 46) An earthquake is caused by sudden shifts in which of the following layers of Earth?
- outer core
  - crust
  - inner core
  - mesosphere