Name _____ Date _____

The Rock Cycle: How Igneous, Sedimentary and Metamorphic Rocks Form and Change

Directions: Answer each question. Some questions ask what a science word means in a sentence, so read that sentence closely.

1. Each term below names an Earth material in the rock cycle. Match each term to its meaning.

Write the letter of the matching answer on each line.

1. _____ Igneous rock
2. _____ Sedimentary rock
3. _____ Metamorphic rock
4. _____ Magma
5. _____ Sediment

Choices for question 1

A. Melted rock that has poured out onto Earth's surface
B. Loose grains of rock and minerals, such as sand, silt and clay
C. The breaking of rock into smaller pieces
D. Melted rock found below Earth's surface
E. Rock that forms when layers of sediment are pressed together and harden
F. Rock changed into a new kind of rock by heat, pressure or both, without melting
G. Rock made when melted rock cools and turns solid

2. Granite and basalt are both igneous rocks. A granite sample has large crystals that are easy to see. A basalt sample has crystals so small that you need a magnifier to see them. What best explains the difference?

A. Basalt was squeezed so hard that its crystals were crushed into tiny bits.
B. Granite's magma cooled slowly underground, giving its crystals time to grow, while basalt's lava cooled quickly at the surface.
C. Granite cooled quickly, and fast cooling makes crystals grow larger.
D. Granite is older, and the crystals in a rock keep growing as the rock ages.

3. Read this sentence about how sandstone forms: "Over a long time, the buried sand grains were squeezed together and cemented into solid rock." What does *cemented* mean in this sentence?

A. Covered with a layer of concrete, like a sidewalk
B. Ground down until the grains became smaller
C. Glued together by minerals that formed in the spaces between grains
D. Melted together into one smooth piece

4. Read this sentence: "Weathering cracked the granite into loose grains, and then erosion carried the grains down the mountain in a stream." What does *erosion* mean in this sentence?

   A. The breaking of rock into smaller pieces

   B. The melting of rock deep underground

   C. The pressing of loose grains into solid rock

   D. The moving of rock pieces from one place to another by water, wind, ice or gravity

5. Dante writes in his notes: "Every rock goes through the rock cycle in the same order: igneous, then sedimentary, then metamorphic, then igneous again." Which statement corrects his notes?

   A. Only igneous rock can turn into other kinds of rock.

   B. His notes are right, because each step must happen before the next one can start.

   C. Any kind of rock can become any other kind, so rocks take many different paths through the cycle.

   D. Rocks follow that order, but they stop changing once they become metamorphic.

6. Most metamorphic rock forms deep below Earth's surface. Why is deep underground a good place for it to form?

   A. Wind and rain wear rock away fastest deep underground.

   B. Deep underground, rock is protected from both heat and pressure.

   C. Rock deep underground melts completely, and that melted rock is what turns into metamorphic rock.

   D. The deeper you go, the hotter the rock gets, and the weight of the rock above squeezes it hard.

7. Two energy sources keep the rock cycle going: heat from Earth's hot interior and energy from the Sun. Which part of the rock cycle is driven mainly by energy from the Sun?

   A. Weathering and erosion, through wind, rain, flowing water and ice

   B. Pushing magma up toward the surface

   C. Melting rock into magma deep underground

   D. Heating and squeezing rock into metamorphic rock

8. A geologist finds the fossil of a seashell inside a layer of rock. Which kind of rock is the layer most likely to be?

   A. Sedimentary rock, because shells can be buried in layers of sediment that later harden into rock

   B. Metamorphic rock, because heat and pressure help preserve shells

   C. Igneous rock, because melted rock keeps shells safe as it cools

   D. Any kind of rock, because fossils are found equally often in all three kinds