Rocks: Mineral Mixtures

MULTIPLE CHOICE

Write the letter of the correct answer in the space provided.

_____ 1. How did humans use rocks in the past?
   a. to play sports
   b. to tell time
   c. to write
   d. to make tools

_____ 2. Which of the following does NOT cause magma to form?
   a. an increase in pressure on rock
   b. a rise in temperature in rock
   c. a change in composition in rock
   d. a decrease in pressure on rock

_____ 3. Sedimentary rock is formed through the process of
   a. cementation
   b. stratification.
   c. erosion.
   d. foliation.

_____ 4. What has to increase for metamorphism to occur?
   a. weathering and erosion
   b. temperature and pressure
   c. melting and cooling
   d. compaction and cementation

_____ 5. Besides weathering and erosion, what other forces shape the Earth’s features?
   a. deposition and uplift
   b. exfoliation and foliation
   c. cementation and melting
   d. composition and texture

_____ 6. When magma cools quickly, what kind of texture does rock have?
   a. coarse-grained
   b. large-grained
   c. medium-grained
   d. fine-grained
7. What are the main categories of sedimentary rock?
   a. extrusive and intrusive
   b. clastic, chemical, and organic
   c. felsic and mafic
   d. foliated and nonfoliated

8. When temperature and pressure change, what can happen to the minerals in rocks?
   a. They stay the same.
   b. They fragment and loosen.
   c. They bind closer together.
   d. They change into other minerals.

9. During the rock cycle, what forms when magma cools?
   a. igneous rock
   b. sedimentary rock
   c. metamorphic rock
   d. foliated rock

10. What do scientists call the rock that is formed when magma cools below the Earth’s surface?
    a. extrusive igneous rock
    b. intrusive igneous rock
    c. eruptive rock
    d. volcanic rock

11. Besides clastic and chemical, what is the other kind of sedimentary rock?
    a. extrusive
    b. foliated
    c. organic
    d. intrusive

12. What kind of metamorphic rock has its mineral grains arranged in planes or bands?
    a. extrusive
    b. foliated
    c. nonfoliated
    d. intrusive
13. Besides texture, how else are rocks classified?
   a. by the amount of foliation
   b. by their grain size
   c. by their grain shape
   d. by their composition

14. The process in which rocks change shape is called
   a. deformation.
   b. deposition.
   c. composition.
   d. foliation.

MATCHING

15. naturally occurring solid mixture of crystals
    of one or more minerals
    a. deposition
    b. erosion
    c. rock
    d. texture
    e. rock cycle
    f. composition

16. process in which sediment is dropped and
    comes to rest
    a. deposition
    b. erosion
    c. rock
    d. texture
    e. rock cycle
    f. composition

17. process by which new rock is made from old
    rock
    a. deposition
    b. erosion
    c. rock
    d. texture
    e. rock cycle
    f. composition

18. the quality of a rock based on size and shape
    a. deposition
    b. erosion
    c. rock
    d. texture
    e. rock cycle
    f. composition

19. process by which sediment is removed from
    its source
    a. deposition
    b. erosion
    c. rock
    d. texture
    e. rock cycle
    f. composition

20. the chemical makeup of a rock
MATCHING

Match the correct definition with the correct term. Write the letter in the space provided.

21. metamorphic rock in which mineral grains are NOT arranged in bands
   ______

22. layers found in sedimentary rocks
   ______

23. rock that cools at the Earth’s surface
   ______

24. process in which layers in sedimentary rock are formed
   ______

25. rock that cools below the Earth’s surface
   ______

   a. stratification
   b. nonfoliated
   c. extrusive igneous rock
   d. strata
   e. intrusive igneous rock
Reinforcement

WHAT IS IT?
1. a sedimentary rock
2. organic sedimentary, clastic sedimentary, and chemical sedimentary
3. a metamorphic rock
4. foliated, nonfoliated
5. Accept any reasonable answer. Sample answer: It is the result of the cooling of magma. It can be intrusive or extrusive. Its origin is magma. What is it? an igneous rock
6. intrusive igneous rocks, extrusive igneous rocks

Critical Thinking

BETWEEN A ROCK AND A HARD PLACE
1. Large amounts of heat and pressure would be necessary to form synthetic gemstones in a laboratory.
2. Heat and pressure would not make synthetic sedimentary rock because it is formed by the gradual accumulation of sediment, not by heat and pressure.
3. As the depth of the Earth increases, so does the amount of pressure. The composition of the surrounding rocks also changes as depth increases. Both composition and pressure determine the type of metamorphic rock that forms.
4. At temperatures greater than 1,000°C, rock usually melts into magma.
5. The carbon from a prehistoric animal could be preserved in sedimentary rock. As the Earth’s crust moves, that rock is forced downward into the Earth. There the great temperature and pressure could transform elements of a sedimentary rock into a metamorphic mineral, such as a diamond.

Section Quizzes

SECTION: THE ROCK CYCLE
1. B
2. E
3. C
4. F
5. A
6. D
7. B
8. D
9. D
10. A

SECTION: IGNEOUS ROCK
1. C
2. A
3. D
4. C
5. D

SECTION: SEDIMENTARY ROCK
1. A
2. C
3. D
4. B
5. A
6. D

SECTION: METAMORPHIC ROCK
1. B
2. C
3. E
4. D
5. A
6. F

Chapter Test A
1. D
2. A
3. A
4. B
5. A
6. D
7. B
8. D
9. A
10. B
11. C
12. B
13. D
14. A
15. C
16. A
17. E
18. D
19. B
20. F
21. B
22. D
23. C
24. A
Chapter Test B

1. stratification
2. nonfoliated rock
3. erosion
4. composition
5. rock cycle
6. A
7. C
8. D
9. D

10. Answers will vary. Sample answer: Clastic sedimentary rock is formed from rock fragments that are cemented together by calcite or quartz. Chemical sedimentary rock is made of dissolved minerals that eventually crystallize.

11. Answers will vary. Sample answer: Contact metamorphism occurs when magma comes into direct contact with rock. Regional metamorphism occurs when large pieces of the Earth’s crust collide with each other.

12. Answers will vary. Sample answer: Under a microscope a nonfoliated rock will not have mineral grains that are aligned.

13. Answers will vary. Sample answer: Limestone is formed from the remains, or fossils, of animals that once lived in the ocean.

14. Answers will vary. Sample answer: Rocks recrystallize when the crystals of the minerals change in composition.

15. Rocks like granite and marble are good building materials because they can withstand weathering for long periods of time.

16. Answers will vary. Sample answer: An extrusive rock formation reveals that there is a lot of activity, perhaps volcanic, going on below the Earth’s surface.

17. All three rock types weather when they are uplifted to the earth’s surface, forming sediments that cover the Earth's surface

18. a. igneous rock
   b. composition
   c. texture
   d. dikes
e. erode
f. conglomerate
g. sedimentary rock

Chapter Test C

1. D
2. A
3. C
4. B
5. A
6. D
7. A
8. B
9. B
10. D
11. B
12. A
13. C
14. uplift
15. stratification
16. index minerals
17. erosion
18. intrusive igneous rock

Standardized Test Preparation

READING
Passage 1
1. D
2. G
3. B

Passage 2
1. B
2. G
3. D

INTERPRETING GRAPHICS
1. B
2. G
3. C
4. H

MATH
1. B
2. G