

TEST BANK



EARTH SCIENCE
and
the Environment
4th EDITION



THOMPSON  TURK

Chapter 2--Minerals

Student: _____

1. Which of the following does not describe a mineral?
 - A. a fundamental form of matter that cannot be broken into simpler substances by ordinary chemical processes
 - B. the building blocks of rocks
 - C. a naturally occurring, inorganic solid with a characteristic chemical composition and a crystalline structure
 - D. natural gems

2. Oil is not a true mineral because
 - A. it is not a solid.
 - B. it does not have crystalline structure.
 - C. it has no definite chemical composition.
 - D. it is not a solid and it does not have crystalline structure.
 - E. it is not a solid, it does not have crystalline structure, and it has no definite chemical composition.

3. In a neutral atom the number of protons
 - A. is greater than the number of electrons.
 - B. is less than the number of electrons.
 - C. is twice the number of electrons.
 - D. equals the number of electrons.

4. How many chemical elements occur naturally in the Earth's crust?
 - A. 8
 - B. 10
 - C. 27
 - D. 88
 - E. 108

5. The nucleus of an atom contains
 - A. neutrons and protons.
 - B. ions.
 - C. shells.
 - D. electrons.
 - E. elements.

6. Which of the following best describes an element?
- A. a small, dense, positively charged subatomic particle
 - B. a fundamental form of matter that can be broken into simpler substances by ordinary chemical processes
 - C. a fundamental form of matter that cannot be broken into simpler substances by ordinary chemical processes
 - D. a naturally occurring, inorganic solid with a characteristic chemical composition and a crystalline structure.
7. Which has mass but no charge?
- A. neutrons
 - B. anions
 - C. protons
 - D. electrons
 - E. ions
8. Which of the following describes a crystal?
- A. a substance composed of a single element whose atoms are arranged in a regular, ordered pattern
 - B. a substance whose atoms are arranged in a regular, orderly, periodically repeated pattern
 - C. any pure substance
 - D. any solid containing randomly oriented sodium and chlorine ions.
9. Which physical properties distinguish a particular mineral from all others?
- A. fracture and faceting
 - B. van der Waals bonds
 - C. chemical composition and crystal structure
 - D. streak and luster
10. Calcite is a/an
- A. silicate mineral.
 - B. clay mineral.
 - C. oxide mineral.
 - D. carbonate mineral.
11. Hardness is
- A. the resistance of a mineral to fracture.
 - B. the resistance of a mineral to shattering.
 - C. dependent on a mineral's flexibility.
 - D. the resistance of a mineral to scratching.

12. Which of the following is **not** a rock-forming mineral?
- A. pyroxene
 - B. feldspar
 - C. galena
 - D. quartz
13. Which of the following is **not** an ore mineral?
- A. feldspar
 - B. galena
 - C. gold
 - D. copper
14. A mineral that is valued for its beauty rather than for industrial use is
- A. an accessory mineral.
 - B. an ore mineral.
 - C. a gem.
 - D. a rock-forming mineral.
15. Minerals are classified
- A. according to their cations.
 - B. according to their anions.
 - C. according to their protons.
 - D. according to their neutrons.
16. The silicate tetrahedron consists of
- A. four central silicon ions surrounded by one oxygen ion.
 - B. four central oxygen ions surrounded by four silicon ions.
 - C. one central oxygen ion surrounded by three silicon ions.
 - D. one central silicon ion surrounded by three oxygen ions.
 - E. one central silicon ions surrounded by four oxygen ions.
17. Limestone is a
- A. sulfide mineral.
 - B. phosphate mineral.
 - C. silicate mineral.
 - D. carbonate mineral.
18. Feldspar structures are based on which of the following arrangements of silicate tetrahedra?
- A. framework structures in which each tetrahedron shares all four of its oxygens with adjacent tetrahedra
 - B. independent tetrahedra that share no oxygens
 - C. rings of alternating silicon and oxygen atoms
 - D. chains of tetrahedra in which each tetrahedron shares two oxygens with adjacent tetrahedra

19. Feldspar makes up
- A. more than 50 percent of the Earth's crust.
 - B. ten percent of the Earth's crust.
 - C. less than 50 percent of the Earth's crust.
 - D. 0.05 percent of the Earth's crust.
20. It is not necessary for a substance to be a solid to be a mineral.
- True False
21. Ice is a mineral.
- True False
22. Synthetic diamond is a mineral.
- True False
23. An element cannot be broken into smaller substances by ordinary chemical processes.
- True False
24. A covalent bond is neutral because its positive and negative charges balance each other.
- True False
25. Only eight elements -oxygen, silicon, aluminum, iron, calcium, magnesium, potassium, and sodium- make up more than 98 percent of the Earth's crust.
- True False
26. The nucleus of an atom is made up of neutrons and protons.
- True False
27. Only atoms with a positive charge are called ions.
- True False
28. A substance in which atoms are arranged without a regular, orderly, periodically repeated pattern is called a crystal.
- True False
29. Electrical forces too weak to bond molecules together are called van der Waals forces.
- True False

30. Fracture is the resistance of a mineral to scratching.

True False

31. Quartz is the only common silicate mineral that contains no cations other than silicon.

True False

32. Individual clay crystals are large enough to be seen with the naked eye.

True False

33. Gold and silver are examples of native elements.

True False

34. A/An _____ is a naturally occurring, inorganic solid with a characteristic chemical composition and a crystalline structure.

35. Vermiculite from the Libby mine is contaminated with a naturally occurring mineral called _____ that is a carcinogen.

36. Electrical forces that hold atoms together in compounds are _____.

37. A/An _____ develops when two or more atoms share their electrons to produce the effect of a filled outer electron shell.

38. A positively charged ion is a _____.

39. A small group of atoms that repeats itself over and over in an orderly, repetitious pattern is called a/an _____.

40. A/An _____ is a planar surface that develops if a crystal grows freely without obstructions.

41. The tendency of some minerals to break along flat surfaces is _____.
- _____
42. A scale that compares the resistance of the surfaces of minerals to scratching is _____.
- _____
43. _____ is the color of a fine powder of a mineral.
- _____
44. _____ is the weight of a substance relative to that of an equal volume of water.
- _____
45. Two ore minerals that are commonly comprised of pure metals and contain only a single element are native _____ and _____.
- _____
46. Two common carbonate minerals are _____ and _____.
- _____
47. Every silicon atom surrounds itself with _____ oxygens in a silica tetrahedron.
- _____
48. In the _____, each tetrahedron links to three others in the same plane.
- _____
49. Ninety-two percent of the Earth's crust is composed of _____ minerals.
- _____
50. Feldspars and quartz are _____ silicates.
- _____

Chapter 2--Minerals Key

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cleavage

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Moh's hardness scale

43. _____ is the color of a fine powder of a mineral.

Streak

44. _____ is the weight of a substance relative to that of an equal volume of water.

Specific gravity

45. Two ore minerals that are commonly comprised of pure metals and contain only a single element are native _____ and _____.

silver, gold

46. Two common carbonate minerals are _____ and _____.

calcite, dolomite

47. Every silicon atom surrounds itself with _____ oxygens in a silica tetrahedron.

four *or*

4

48. In the _____, each tetrahedron links to three others in the same plane.

sheet silicates

49. Ninety-two percent of the Earth's crust is composed of _____ minerals.

silicate

50. Feldspars and quartz are _____ silicates.

framework