

Import Settings:
Base Settings: Brownstone Default
File: Test bank for Skinner, Blue Planet 3e, Chapter 3

True/False

1. The example of water and oil in the same container that are separated is an example of two phases existing together with only one state.

Ans: True

Multiple Choice

2. In the _____ state, matter has a definite volume but its constituent atoms are able to flow freely past one another; the material does not retain its own shape but conforms to the shape of its container, taking on a free surface under the influence of gravity.

- a) gas
- b) solid
- c) liquid
- d) plasma

Ans: c

3. In the three states of matter, _____ takes the shape of the container and also fills the volume of the container; _____ takes the shape of the container but has a fixed volume; while _____ keeps its shape and has a fixed volume.

- a) gas; liquid; solid
- b) gas; solid; liquid
- c) liquid; gas; solid
- d) liquid; solid; gas
- e) solid; liquid; gas

Ans: a

4. A _____ is a continuous body with planar surfaces, while a _____ is embedded in a larger rock.

- a) mineral grain; crystal
- b) crystal; mineral grain
- c) silicate; crystal
- d) silicate; mineral grain

Ans: b

5. What obvious characteristic of a mineral sample is usually not helpful for indentifying a mineral?

- a) texture
- b) color
- c) hardness
- d) luster
- e) density

Ans: b

True/False

6. Diamond is the only mineral that is harder than glass according to the Mohs scale.

Ans: False

Essay

7. Explain how the chemical composition of a mineral controls its crystal structure.

Ans:

8. Some minerals contain economically important elements. If you were prospecting in the field, what tools would you carry to help you identify different minerals?

Ans:

Fill-in-the-Blank

9. The three common _____ of matter with which we are most familiar in our everyday lives are solid, liquid, and gas.

Ans: states

10. _____ are homogeneous masses of material that can be separated from one another by a definable boundary.

Ans: Phases

11. Colloids that consist of microparticles or nanoparticles suspended in a gas (such as air) are called _____.

Ans: aerosols

12. An _____ is the smallest individual particle that retains the distinctive properties of a given chemical element.

Ans: atom

13. _____ are atoms with the same atomic number and hence essentially the same chemical properties, but different mass numbers.

Ans: Isotopes

14. _____ form when one or more kinds of anion combine chemically with one or more kinds of cation in a specific ratio.

Ans: Compounds

15. A _____ is the smallest unit that retains all the properties of a compound.

Ans: molecule

16. The term _____ is specifically applied to compounds consisting of carbon atoms that are joined to other carbon atoms by a strong type of bond called a covalent bond.

Ans: organic

17. _____ are long, chainlike polymers made of amino acids bonded together.

Ans: Proteins

18. The _____ of the Earth is a spherical mass composed largely of metallic iron, with smaller amounts of nickel and other elements.

Ans: core

19. The thick shell of dense, rocky matter that surrounds the Earth's core is called the _____ .

Ans: mantle

20. Above the mantle lies the thinnest and outermost layer of the Earth, the _____ , which consists of rocky matter that is less dense than mantle rock.

Ans: crust

21. Within the upper mantle, from 350 to about 100 km below the surface, is a region called the _____ where the balance between temperature and pressure is such that rocks have little strength.

Ans: asthenosphere

22. This hard outer layer, which includes the uppermost mantle and all of the crust, is called the.

Ans: lithosphere

23. A mineral's tendency to break in preferred directions along bright, reflective planar surfaces is called _____.

Ans: cleavage

24. The term _____ refers to the relative resistance of a mineral to being scratched.

Ans: hardness

25. A _____ is any naturally formed, nonliving, firm, coherent aggregate mass of solid matter that constitutes part of a planet (or asteroid, moon, or other related planetary object).

Ans: rock

26. The product of rock weathering is a layer of broken-up, disintegrated rock matter called _____ .

Ans: regolith

True/False

27. Water and lava are both liquids.

Ans: True

28. It is not possible for materials to coexist in two different phases but in the same state.

Ans: False

29. Solid, liquid and gas are the only three states of matter.

Ans: False

30. An atom is the smallest individual particle that retains the distinctive properties of a given chemical element and cannot be split into smaller components.

Ans: False

31. Isotopes of an element have the same number of protons but different number of neutrons.

Ans: True

32. When sugar and water are mixed together to form a solution, no chemical change has occurred.

Ans: True

33. Organic compounds can only be produced by living organisms.

Ans: False

34. Lipids are a type of organic molecule and are also polymers.

Ans: False

35. Genes are regions of DNA coded for specific proteins that perform particular functions.

Ans: True

36. Some forms of carbohydrates cannot be digested by humans.

Ans: True

37. Earth is the only terrestrial planet within our solar system.

Ans: False

38. The inner-most core of the Earth is completely liquid.

Ans: False

39. Continental crust is less dense than oceanic crust.

Ans: True

40. There are transitions between solid and liquid within the Earth that occur without changes in composition.

Ans: True

41. Diamond is not an example of a mineral since it cannot be flaked apart.

Ans: False

42. Glass can be categorized as a mineral.

Ans: False

43. Minerals have a tendency to break in preferred directions along bright, reflective planar surfaces.

Ans: True

44. Metamorphic rock cannot be formed from igneous rock.

Ans: False

45. The longer amounts of time to cool lead to larger mineral grain sizes in igneous rock.

Ans: True

46. Soil is a special type of regolith that contains both organic matter and minerals.

Ans: True

Multiple choice

47. Which of the following is the most viscous liquid?

- a) water
- b) lava
- c) diamond
- d) a solution of water and sugar

Ans: b

48. When water changes into steam,
- a) both a change of state and a change of phase have occurred
 - b) only a change of state has occurred
 - c) only a change of phase has occurred
 - d) neither a change of state nor a change of phase have occurred

Ans: a

49. A glass containing a layer of oil on top of a layer of water would contain:
- a) different states and different phases
 - b) different states but the same phase
 - c) different phases but the same state
 - d) the same states and the same phases

Ans: c

50. A glass of water with ice cubes would contain:
- a) the same states and the same phases
 - b) different phases but the same state
 - c) different states but the same phase
 - d) different states and different phases

Ans: d

51. _____ hold their shape to a certain extent, but they are also jellylike and are easily deformed.
- a) aerosols
 - b) plasmas
 - c) liquids
 - d) solids
 - e) colloids

Ans: e

52. A naturally occurring _____ is fog.

- a) plasma
- b) colloid
- c) aerosol
- d) liquid
- e) solid

Ans: c

53. The atomic number of an element is given by the number of _____ in its nucleus.

- a) energy shells
- b) electrons
- c) neutrons
- d) isotopes
- e) protons

Ans: e

54. The mass number of an element is give by the sum of its:

- a) protons and isotopes
- b) protons and electrons
- c) electrons and neutrons
- d) protons and neutrons
- e) isotopes and electrons

Ans: d

55. Isotopes of the same element have the same number of _____ but different numbers of _____.

- a) neutrons; protons
- b) protons; neutrons
- c) protons; electrons
- d) electrons; protons
- e) neutrons; electrons

Ans: b

56. In an ionic bond,

- a) electrons have been exchanged.
- b) protons have been exchanged.
- c) neutrons have been exchanged.
- d) an isotope is formed.
- e) a new element is formed.

Ans: a

57. Water is a _____ containing oxygen and hydrogen while air is a _____ of oxygen and nitrogen.

- a) solution; mixture
- b) mixture; compound
- c) solution; compound
- d) compound; mixture

Ans: d

58. Which of the following pairs of compounds are considered inorganic?

- a) diamonds and carbon dioxide
- b) biopolymers and diamonds
- c) biopolymers and carbon dioxide
- d) proteins and diamonds
- e) proteins and biopolymers

Ans: a

59. In polymerization,

- a) more than two compounds have been added to a mixture.
- b) small molecules are linked together to form long chains or three-dimensional networks.
- c) compounds are joined only by ionic bond.
- d) a mixture is created by joining multiple compounds.

Ans: b

60. DNA is an example of a:

- a) carbohydrate
- b) protein
- c) nucleic acid

- d) lipid
- e) steroid

Ans: c

61. Which of the following is a carbohydrate?

- a) fat
- b) glucose
- c) phospholipid
- d) wax
- e) steroid

Ans: b

62. Which of the following is not an example of a lipid?

- a) steroids
- b) fats and oils
- c) phospholipids
- d) waxes
- e) proteins

Ans: e

63. Which of the following gives the correct compositional layering of the Earth, from interior to surface?

- a) crust, mantle, core
- b) core, mantle, crust
- c) core, crust, mantle
- d) crust, core, mantle
- e) mantle, crust, core

Ans: b

64. Which of the following gives the correct order of the zones of rock strength, from the interior to the surface?

- a) mesosphere, asthenosphere, lithosphere
- b) lithosphere, asthenosphere, mesosphere
- c) mesosphere, lithosphere, asthenosphere

- d) lithosphere, mesosphere, asthenosphere
- e) asthenosphere, mesosphere, lithosphere

Ans: a

65. Which are the two most abundant elements of the Earth's continental crust?

- a) iron and aluminum
- b) oxygen and aluminum
- c) silicon and aluminum
- d) oxygen and silicon
- e) iron and oxygen

Ans: d

66. Which of the following is not a requirement to be a mineral?

- a) naturally formed
- b) translucent
- c) inorganic
- d) solid
- e) specific chemical composition

Ans: b

67. The common mineral silicate is composed of:

- a) sulfur and oxygen
- b) magnesium and oxygen
- c) sulfur and oxygen
- d) carbon and oxygen
- e) silicon and oxygen

Ans: e

68. Which property is always the same for a given mineral?

- a) crystal form
- b) size of crystal faces
- c) size of crystals
- d) angle between faces

Ans: d

69. A _____ is a breakage surface, whereas a _____ is a growth surface.

- a) crystal face; cleavage surface
- b) cleavage surface; crystal face
- c) crystal form; cleavage surface
- d) cleavage surface; crystal form

Ans: b

70. The specific gravity of a mineral is:

- a) the average volume per unit mass
- b) the ratio of the weight of an equal volume of water to the weight of a substance
- c) the average mass per unit volume
- d) the ratio of the weight of a substance to the weight of an equal volume of water

Ans: d

71. A rock formed from completely molten magma is a _____ rock, while a rock formed by high temperatures and pressures without complete melting is a _____ rock.

- a) igneous; metamorphic
- b) metamorphic; igneous
- c) igneous; sedimentary
- d) metamorphic; sedimentary
- e) sedimentary; igneous

Ans: a

72. On the surface of the Earth, _____ rocks are most common, while for the crust as a whole _____ rocks are most common.

- a) igneous; metamorphic
- b) sedimentary; igneous
- c) metamorphic; igneous
- d) igneous; sedimentary
- e) metamorphic; sedimentary

Ans: b

73. A thin section is often used to examine the _____ of a rock.

- a) luster
- b) density
- c) hardness
- d) cleavage
- e) texture

Ans: e

74. Igneous rocks that crystallize underground are _____ rocks, while _____ rocks crystallize after emerging from a volcano.

- a) volcanic; metamorphic
- b) volcanic; plutonic
- c) plutonic; volcanic
- d) metamorphic; volcanic
- e) plutonic; metamorphic

Ans: c

75. Plutonic rocks cool more _____ and have _____ crystal sizes compared to volcanic rocks.

- a) quickly; smaller
- b) quickly; larger
- c) slowly; smaller
- d) slowly; larger

Ans: d

76. Which type of rock will have properties that reflect the direction pressure was applied to the rock during its transformation?

- a) igneous
- b) metamorphic
- c) sedimentary
- d) volcanic
- e) plutonic

Ans: b

77. The presence of fossils indicates a specimen is which type of rock?

- a) plutonic
- b) metamorphic
- c) igneous
- d) volcanic
- e) sedimentary

Ans: e

78. Regolith is:

- a) the decomposition and disintegration of rock by weathering
- b) a metamorphic rock that has been subjected to directional stresses
- c) an igneous rock that cooled underneath the ground
- d) an igneous rock that cooled on the surface of the Earth

Ans: a

79. Regolith becomes a type of _____, which is then known as _____ if it is transported.

- a) alluvium; clastic
- b) alluvium; sediment
- c) sediment; clastic
- d) clastic; sediment
- e) sediment; alluvium

Ans: e

80. When regolith contains organic matter, it is:

- a) alluvium
- b) soil
- c) clastic sediment
- d) chemical sediment

Ans: b

81. In biogeochemical cycles, the material in these cycles _____ and the energy that drives these cycles _____.

- a) remains indefinitely; must be constantly renewed
- b) remains indefinitely; remains indefinitely
- c) must be constantly renewed; must be constantly renewed
- d) must be constantly renewed; remains indefinitely

Ans: a