Chapter 5 Practice Test

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Which of the following is a description of matter?
a. the amount of space an object fills
b. anything that has mass and volume
c. material that contains one type of particle
d. material that contains two or more pure substances

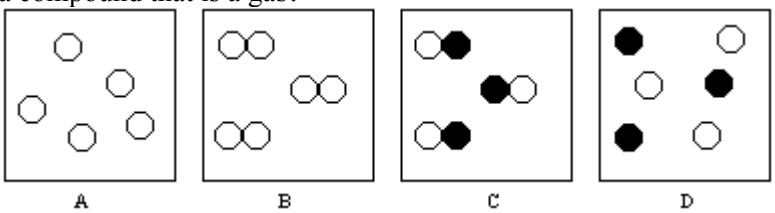
____ 2. Which of the following is an element?
a. gasoline
b. table salt
c. seawater
d. hydrogen

____ 3. Soft white gold, used in jewellery, contains 75% gold and 25% palladium. Which of the following describes this mixture?
a. alloy
b. compound
c. pure substance
d. heterogeneous mixture

____ 4. Which of the following describes why air is classed as a mixture?
a. It is clear and colourless.
b. Its composition does not change.
c. It is made up of several elements.
d. It contains at least two different pure substances.

____ 5. Which of the following describes a pure substance consisting of two or more kinds of atoms chemically combined?
a. solution
b. element
c. compound
d. homogeneous mixture

____ 6. In the following diagrams, the empty and filled circles represent atoms. Which diagram most likely represents a compound that is a gas?



a. A
b. B
c. C
d. D

____ 7. Which of the following is a physical property of sulphur?

I. It burns in the air.
II. It is bright yellow in colour.
III. It is a solid at room temperature.

a. I and II only
b. I and III only
c. II and III only
d. I, II, and III

____ 8. Which of the following is a physical property of iron?
a. It is magnetic.
b. It carries oxygen in red blood cells.
c. It combines with oxygen to form rust.
d. All of the above.

____ 9. Which of the following properties would allow a student to distinguish between glass and diamond?
a. lustre
b. colour
c. hardness
d. solubility in water

____ 10. Which of the following properties would allow a student to distinguish between water and rubbing alcohol?
a. state
b. density
c. ductility
d. magnetism

____ 11. Which of the following properties would allow a student to distinguish between salt and white sand?
a. colour
b. viscosity
c. brittleness
d. crystalline structure

____ 12. The statement “Alcohol boils at 60 °C” pertains to which of the following properties of matter?
a. state
b. solubility
c. boiling point
d. melting point

____ 13. The statement “Copper metal can be bent into different shapes” pertains to which of the following properties of matter?
a. lustre
b. ductility
c. malleability
d. all of the above

____ 14. “A steel blade can scratch glass” describes which of the following properties of matter?
a. state
b. density
c. hardness
d. crystalline shape

____ 15. Which of the following situations describes a chemical property?
   a. Aluminum is a malleable metal.
   b. The density of gold is 19.3g/cm^3.
   c. Mercury is a liquid at room temperature.
   d. Hydrogen reacts explosively with oxygen.

____ 16. Which of the following is a chemical property of carbon?
   a. It burns easily.
   b. It is insoluble in water.
   c. As graphite, it conducts electricity.
   d. It exists in two forms: graphite (a black solid) and diamond (a clear, crystalline solid).

____ 17. All of the following are properties of table sugar. Which is a chemical property?
   a. It has a sweet taste.
   b. It dissolves easily in water.
   c. It turns black when heated.
   d. It is a white solid at room temperature.

____ 18. Two different brands of hair shampoo behave differently when poured out of their containers. Brand X pours very slowly, while Brand Y pours much more quickly. What statement below describes this difference?
   a. Brand X is more ductile than Brand Y.
   b. Brand X is more viscous than Brand Y.
   c. Brand X has a higher density than Brand Y.
   d. Brand X has a higher melting point than Brand Y.

____ 19. The density of aluminum is 2.7 g/cm^3. Four students each measured the mass and volume of a sample of metal; their results are shown below. Only one of the students actually had a sample of aluminum; the other students had different materials. From the information given, decide which student had the aluminum.
   a. mass = 28.4 g volume = 76.7 cm^3
   b. mass = 37.4 g volume = 15.1 cm^3
   c. mass = 88.3 g volume = 30.2 cm^3
   d. mass = 76.7 g volume = 28.4 cm^3

____ 20. A student has blocks of four different materials of identical mass. The materials are ice, gold, aluminum, and Styrofoam. Which block would have the largest volume?
   a. ice
   b. gold
   c. aluminum
   d. Styrofoam

____ 21. The density of glycerol is 1.26 g/cm^3. What is the mass of 250 cm^3 of glycerol?
   a. 0.00504g
   b. 198.4g
   c. 251.26g
   d. 315g

____ 22. A student measured the mass and volume of three samples of material; the data are shown below.

Sample	Mass g	Volume (cm^3)
I	34	21
II	111	88
III	1500	1190

Which samples could be made of the same substance?
a. I and II only
b. I and III only
c. II and III only
d. I, II, and III

____ 23. The following statements apply to a solid substance.

	Property
I	The mass of the solid is 77.5 g.
II	The density of the solid is 2.4 g/cm^3.
III	The melting point of the solid is 689 degrees C.

Which of these properties would be more useful in identifying the solid?
a. I and II only
b. I and III only
c. II and III only
d. I, II, and III

____ 24. Yellow corn syrup sinks as it is poured into water. Based on this observation, which of the following conclusions can be made?
a. Corn syrup is soluble in water.
b. Corn syrup is more viscous than water.
c. The density of corn syrup is less than 1.0 g/cm^3.
d. The density of corn syrup is greater than 1.0 g/cm^3.

____ 25. Which of the following describes combustion?
a. the reaction of metals with an acid forming hydrogen gas
b. the reaction of minerals with an acid producing carbon dioxide
c. the slow reaction of metals with oxygen producing metal oxides
d. the rapid reaction of materials with oxygen, releasing a great deal of energy in a short time period

____ 26. Which of the following describes the rusting of cars?
a. solubility
b. corrosion
c. combustion
d. flammability

____ 27. Which of the following is a physical property?
a. solubility
b. corrosion
c. oxidation
d. flammability

____ 28. Which of the following is an example of a chemical change?
a. the crushing of stones
b. the formation of clouds
c. the separation of cream from milk
d. the burning of gasoline in an engine

____ 29. Which of the following is an example of a physical change?
a. baking a cake
b. mowing the lawn
c. photosynthesis in plants
d. digesting food in the stomach

____ 30. Which of the following describes a physical change?
a. It is usually very hard to reverse.
b. It changes the mass of a substance.
c. It changes the form or state of a substance.
d. It changes materials into different substances.

____ 31. What is the term given to the change of state that occurs when frost forms on windows in winter?
a. melting
b. deposition
c. evaporation
d. solidification

____ 32. What is the term given to the change of state that occurs when solid mothballs gradually disappear over time?
a. melting
b. sublimation
c. solidification
d. condensation

____ 33. Which of the following provides evidence that a chemical change has taken place?
a. A change of state occurs.
b. A new substance is formed.
c. The mass of the materials change.
d. The volume of the materials change.

____ 34. Which of the following is a physical change?
a. A solid dissolves when added to water.
b. Bubbles of gas form when a solid is placed in a solution.
c. A yellow precipitate forms when two clear solutions are combined.
d. Orange crystals change to a grey powder when heated, and stay grey when cooled.

____ 35. Which of the following do physical changes and chemical changes have in common?
a. new substance forms
b. new set of properties
c. energy change may occur
d. all of the above

____ 37. The fire triangle is a useful way of remembering the components of a combustion reaction. What are the three parts of the triangle?
a. heat, fuel, oxygen
b. light, fuel, oxygen
c. heat, carbon dioxide, water
d. light, carbon dioxide, water

____ 42. What is happening in the diagram?

a. melting
b. dissolving
c. sublimation
d. solidification

Chapter 5 Test
Answer Section

MULTIPLE CHOICE

1. ANS: B PTS: 1 REF: K OBJ: 5.1
   LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI1
2. ANS: D PTS: 1 REF: K OBJ: 5.1
   LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI1
3. ANS: A PTS: 1 REF: U/A OBJ: 5.1
   LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI1
4. ANS: D PTS: 1 REF: K OBJ: 5.1
   LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI1
5. ANS: C PTS: 1 REF: K OBJ: 5.1
   LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI1
6. ANS: C PTS: 1 REF: K OBJ: 5.1
   LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI1
7. ANS: C PTS: 1 REF: K OBJ: 5.2
   LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
8. ANS: A PTS: 1 REF: K OBJ: 5.2
   LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
9. ANS: C PTS: 1 REF: U/A OBJ: 5.2
   LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
10. ANS: B PTS: 1 REF: U/A OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
11. ANS: D PTS: 1 REF: U/A OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
12. ANS: C PTS: 1 REF: U/A OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
13. ANS: C PTS: 1 REF: U/A OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
14. ANS: C PTS: 1 REF: U/A OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
15. ANS: D PTS: 1 REF: U/A OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI4
16. ANS: A PTS: 1 REF: K OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI3
17. ANS: C PTS: 1 REF: K OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2 | Unit B - Ch. 05 KI3
18. ANS: B PTS: 1 REF: U/A OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
19. ANS: D PTS: 1 REF: U/A OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
20. ANS: D PTS: 1 REF: U/A OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
21. ANS: D PTS: 1 REF: U/A OBJ: 5.2
    LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2
22. ANS: C PTS: 1 REF: U/A OBJ: 5.2

LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2

23. ANS: C PTS: 1 REF: K OBJ: 5.2
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2

24. ANS: D PTS: 1 REF: U/A OBJ: 5.2
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI2

25. ANS: D PTS: 1 REF: K OBJ: 5.2
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI4

26. ANS: B PTS: 1 REF: K OBJ: 5.2
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI4

27. ANS: A PTS: 1 REF: K OBJ: 5.2
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI4

28. ANS: D PTS: 1 REF: U/A OBJ: 5.3
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

29. ANS: B PTS: 1 REF: U/A OBJ: 5.3
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

30. ANS: C PTS: 1 REF: K OBJ: 5.3
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

31. ANS: B PTS: 1 REF: K OBJ: 5.3
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

32. ANS: B PTS: 1 REF: K OBJ: 5.3
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

33. ANS: B PTS: 1 REF: K OBJ: 5.3
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

34. ANS: A PTS: 1 REF: K OBJ: 5.3
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

35. ANS: C PTS: 1 REF: K OBJ: 5.3
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

36. ANS: D PTS: 1 REF: K OBJ: 5.3
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

37. ANS: A PTS: 1 REF: K OBJ: 5.3
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

38. ANS: D PTS: 1 REF: U/A OBJ: 5.4
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

39. ANS: B PTS: 1 REF: K OBJ: 5.4
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

40. ANS: D PTS: 1 REF: K OBJ: 5.4
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

41. ANS: A PTS: 1 REF: U/A OBJ: 5.4
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

42. ANS: A PTS: 1 REF: K OBJ: 5.4
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

43. ANS: B PTS: 1 REF: U/A OBJ: 5.4
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5

44. ANS: A PTS: 1 REF: U/A OBJ: 5.4
LOC: Unit B - PLC4 TOP: Unit B - Ch. 05 KI5