

# Physical Science Unit 4 Test Review Game

# Unit 4 Test Review Game

1. Which of the following are pure substances?

- a.solutions
- b.compounds
- c.homogeneous mixtures
- d.colloids

b

# Unit 4 Test Review Game

2. If an unknown substance CANNOT be broken down into simpler substances, it is

- a.a compound.
- b.an element.
- c.made of one kind of atom.
- d.both b and c

d

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3. Which of the following is a heterogeneous mixture?

- a.water in a swimming pool
- b.sugar water
- c.a jar of mixed nuts
- d.stainless steel

C

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4. A mixture can be classified as a solution, suspension, or colloid based on the

- a.number of particles it contains.
- b.size of its largest particles.
- c.color of its particles.
- d.size of its smallest particles.

b

# Unit 4 Test Review Game

5. Which of the following is malleable?

- a.glass
- b.pottery
- c.ice
- d.gold

d

# Unit 4 Test Review Game

6. Filtration can be used to separate mixtures based on

- a.their boiling points.
- b.their densities.
- c.their melting points.
- d.the size of their particles.

d

# Unit 4 Test Review Game

7. Which of the following is a physical change?

- a.sawing a piece of wood in half
- b.burning a piece of wood
- c.rust forming on an iron fence
- d.a copper roof changing color from red to green

a



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8. Which of the following is NOT a clue that a chemical change has occurred?

- a.change in color
- b.production of a gas
- c.formation of a precipitate
- d.change in shape

d

# Unit 4 Test Review Game

9. Which of the following is a chemical change?

- a.ice melting
- b.ice being carved
- c.water boiling
- d.water breaking down into hydrogen and oxygen

d

# Unit 4 Test Review Game

10. A gas has

- a.a definite volume but no definite shape.
- b.a definite shape but no definite volume.
- c.no definite shape or definite volume.
- d.a definite volume and definite shape.

C

# Unit 4 Test Review Game

11. Matter that has a definite volume but no definite shape is a

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

a

# Unit 4 Test Review Game

12. Which of the following are the forces of attraction so weak that particles can move around freely?

- a.solid
- b.liquid
- c.gas
- d.all of the above

c

# Unit 4 Test Review Game

13. Which of the following factors affects the pressure of an enclosed gas?

- a.temperature
- b.volume
- c.number of particles
- d.all of the above

d

# Unit 4 Test Review Game

14. Raising the temperature of a gas will increase its pressure if the volume of the gas
- a.and the number of particles are increased.
  - b.is increased, but the number of particles is constant.
  - c.and the number of particles are constant.
  - d.is constant, but the number of particles is reduced.

c

# Unit 4 Test Review Game

15. The temperature and volume in a closed container of gas remain constant. If the number of particles of gas is increased, the gas pressure will

- a.increase.
- b.decrease.
- c.remain constant.
- d.cause a decrease in the average kinetic energy of the particles.

a



# Unit 4 Test Review Game

16. What type of change occurs when water changes from a solid to a liquid?

- a.a phase change
- b.a physical change
- c.an irreversible change
- d.both a and b

d

# Unit 4 Test Review Game

17. During a phase change, the temperature of a substance

- a.increases.
- b.decreases.
- c.does not change.
- d.increases or decreases.

C

# Unit 4 Test Review Game

18. The phase change that is the reverse of sublimation is

- a.condensation.
- b.melting.
- c.vaporization.
- d.deposition

d

# Unit 4 Test Review Game

19. If a solid piece of naphthalene is heated and remains at 80°C until it is completely melted, you know that 80°C is the

- a.freezing point of naphthalene.
- b.melting point of naphthalene.
- c.boiling point of naphthalene.
- d.both a and b

d

# Unit 4 Test Review Game

20. During which phase change does the arrangement of water molecules become more orderly?

- a.melting
- b.freezing
- c.boiling
- d.condensing

b

# Unit 4 Test Review Game

21. The phase change in which a substance changes from a liquid to a gas is

- a.deposition.
- b.sublimation.
- c.condensation.
- d.vaporization.

d

# Unit 4 Test Review Game

22. The phase change in which a substance changes from a solid to a gas or vapor without changing to a liquid first is

- a.sublimation.
- b.deposition.
- c.vaporization.
- d.melting.

a

# Unit 4 Test Review Game

23. Classify the six phase changes as endothermic or exothermic.

EndothermicExothermic

Boiling

Melting

Sublimation

Freezing

Condensation

Deposition



# Unit 4 Test Review Game

24. A child takes a helium-filled balloon outside into the cold air. She notices that the balloon deflates a bit. What most likely caused this to happen?

- a.The air pressure inside was higher than the air pressure outside.
- b.The cold air outside allowed some of the helium atoms to escape from the balloon.
- c.The speed of the helium atoms decreased outside, causing the pressure in the balloon to decrease.
- d.The air molecules outside were moving faster than the helium atoms, putting pressure on the outside surface of the balloon.

C

# Unit 4 Test Review Game

25. Which question would BEST help a student determine which container holds a liquid?

- a.Which sample has particles that are electrically charged?
- b.Which sample has particles that are sliding past each other?
- c.Which sample has particles that are tightly organized in an orderly array?
- d.Which sample has particles that are quickly moving away from each other?

# Unit 4 Test Review Game

26. True or False? Chromium (Cr) has 24 protons, 24 neutrons, and 24 electrons.

False

# Unit 4 Test Review Game

27. If an atom has 34 protons, 40 neutrons and 34 electrons, what is its mass number?

- a.108
- b.74
- c.34
- d.40

b

# Unit 4 Test Review Game

28. If an atom of tin has a mass number of 118 and an atomic number of 50, how many neutrons are in its nucleus?

- a.168
- b.50
- c.118
- d.68

d

# Unit 4 Test Review Game

29. If an atom of an element has a mass number of 32 and 20 neutrons in its nucleus, what is the atomic number of the element?

- a.12
- b.32
- c.52
- d.20

a

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30. In an atomic model that includes a nucleus, positive charge is located where?

- A. in the nucleus
- B. in various locations in the atom
- C. outside of the nucleus
- D. in the electron cloud

a

# Unit 4 Test Review Game

31. What is unique for each element on the periodic table?

- A. number of protons
- B. number of neutrons
- C. number of electrons
- D. mass and charge

a



# Unit 4 Test Review Game

32. True or False. If the nucleus of an atom has 12 protons and 14 neutrons, then the element is Silicon.

False

# Unit 4 Test Review Game

33. How many neutrons does Palladium-108 (Pd) contain?

62

# Unit 4 Test Review Game

34. How many protons does Cerium-140 (Ce) contain?

58

# Unit 4 Test Review Game

35. How do isotopes of elements differ?

Different numbers of neutrons  
OR different mass numbers

# Unit 4 Test Review Game

36. The Greek philosopher Democritus coined what word for a tiny piece of matter that cannot be divided?

- A. element
- B. atom
- C. electron
- D. molecule

B

# Unit 4 Test Review Game

37. J.J. Thomson's experiment provided evidence that an atom

- A. is the smallest particle of matter.
- B. contains negatively charged particles.
- C. has a negative charge.
- D. has a positive charge

B

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38. Rutherford's gold foil experiment provided enough evidence for which of the following statements?

- A. Negative and positive charges are spread evenly throughout an atom.
- B. Alpha particles have a positive charge.
- C. Gold is not as dense as previously thought.
- D. There is a dense, positively charged mass in the center of an atom.

D

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39. To find the number of neutrons in an atom, you would subtract

- A. mass number from atomic number.
- B. atomic number from mass number.
- C. atomic number from electron number.
- D. isotope number from atomic number.

B



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40. Which statement is true about oxygen-17 and oxygen-18?

- A. They do not have the same number of protons.
- B. Their atoms have an identical mass.
- C. They are isotopes of oxygen.
- D. They have the same mass number.

C

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41. What is the difference between an atom in the ground state and an atom in an excited state?

- A. The atom in the ground state has less energy and is less stable than the atom in an excited state.
- B. The atom in an excited state has one fewer electron than the atom in the ground state.
- C. The atom in an excited state has more energy and is less stable than the atom in the ground state.
- D. The atom in an excited state has one more electron than the atom in the ground state.

C

# Unit 4 Test Review Game

42. Which statement accurately describes the arrangement of electrons in Bohr's atomic model?

- A. Electrons vibrate in fixed locations around the nucleus.
- B. Electrons travel around the nucleus in fixed energy levels with energies that vary from level to level.
- C. Electrons travel around the nucleus in fixed energy levels with equal amounts of energy.
- D. Electrons travel randomly in the relatively large space outside the nucleus.

**B**

# Unit 4 Test Review Game

43. Which subatomic particles are primarily responsible for giving an atom its mass?

- A. electrons and neutrons
- B. protons and neutrons
- C. electrons, only
- D. protons, only

B

# Unit 4 Test Review Game

44. A neutral atom of sulfur contains 16 protons, 16 electrons, and 16 neutrons. Which of the following describes the constituents of an atom that is of an isotope of sulfur?

- A. 16 protons, 17 electrons, 16 protons
- B. 17 protons, 17 electrons, 17 neutrons
- C. 17 protons, 16 electrons, 16 neutrons
- D. 16 protons, 16 electrons, 17 neutrons

D

# Unit 4 Test Review Game

45. What were discovered as a result of experiments with a cathode ray?

- A. protons only
- B. nuclei
- C. neutrons
- D. electrons and protons

D