

TEST NAME: **Final Exam Review #2**
TEST ID: **1729413**
GRADE: **09 - Ninth Grade - 12 - Twelfth Grade**
SUBJECT: **Life and Physical Sciences**
TEST CATEGORY: **My Classroom**

05/10/17, Final Exam Review #2

Student: _____

Class: _____

Date: _____

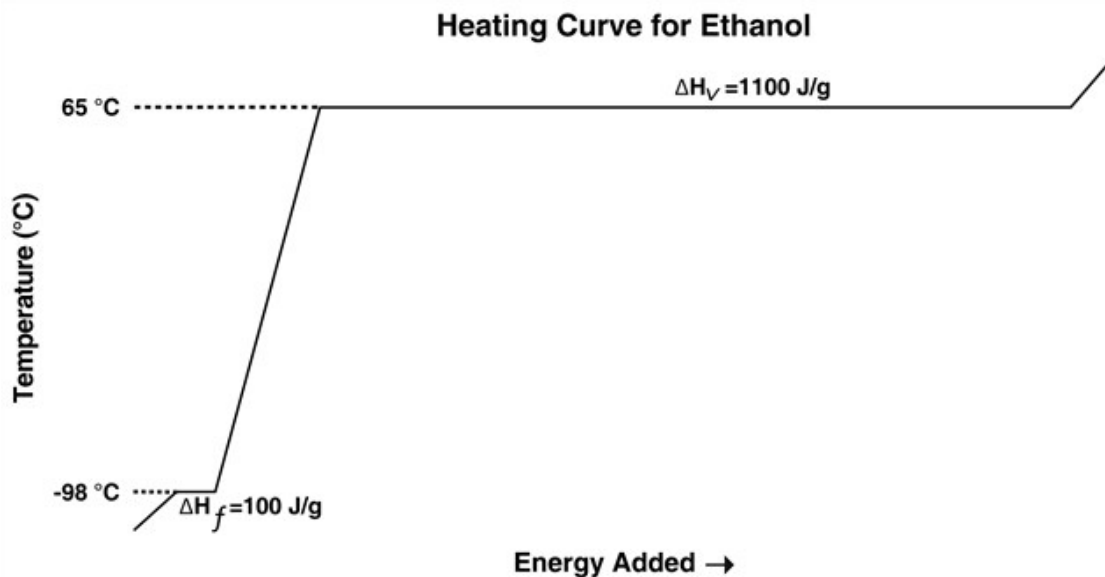
1. Which set shows the physical states of water, H_2O , in order according to the increasing energy of particle motion?

- A. H_2O (s), H_2O (g), H_2O (l)
- B. H_2O (g), H_2O (s), H_2O (l)
- C. H_2O (l), H_2O (s), H_2O (g)
- D. H_2O (s), H_2O (l), H_2O (g)

2. A sample of sulfur forms crystals when it

- A. melts.
- B. freezes.
- C. evaporates.
- D. condenses.

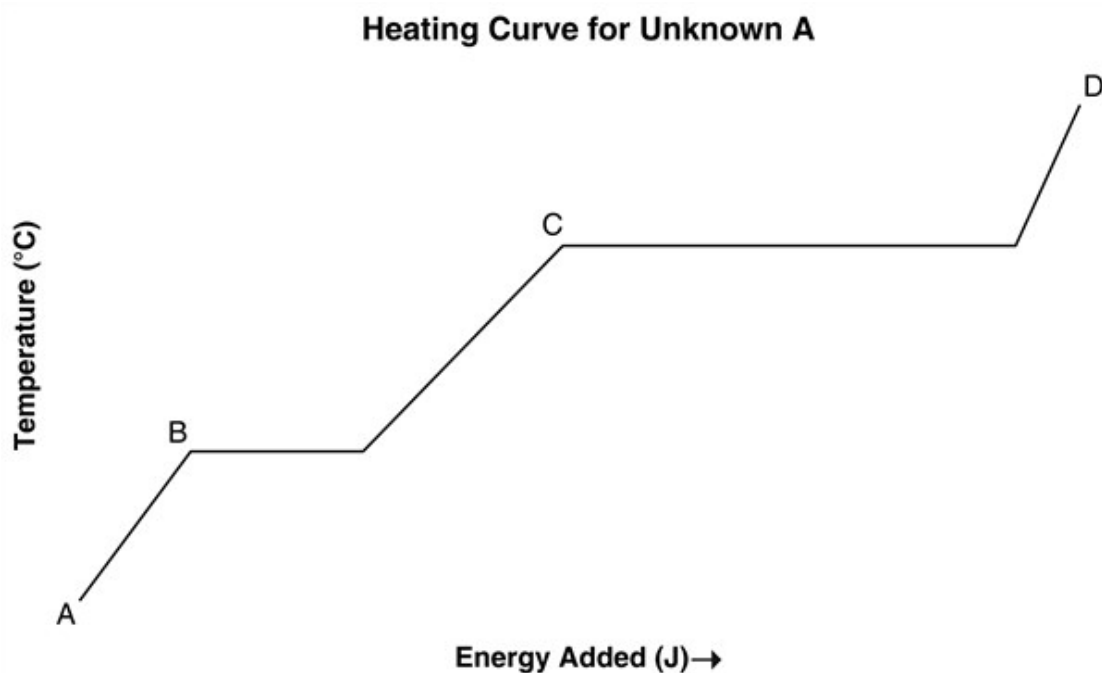
3. The heating curve for methanol is shown below.



Based on the graph, how much energy is required to completely evaporate 73 g of methanol?

- A. 7 kJ
- B. 80 kJ
- C. 700 kJ
- D. 80000 kJ

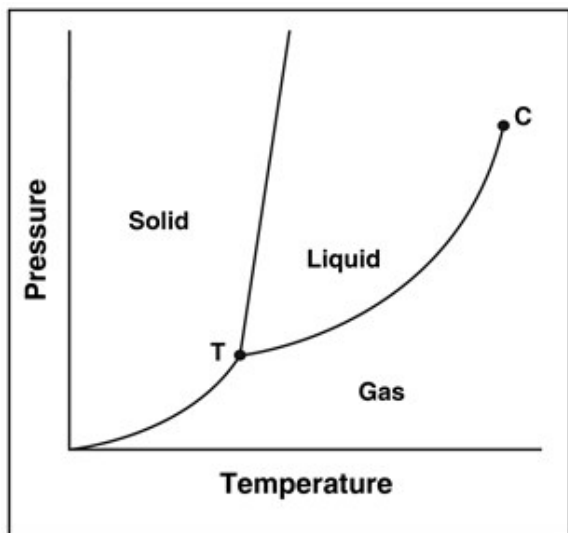
4. The heating curve for an unknown substance is shown below.



A scientist drew this curve after heating a substance that was initially solid over a period of time until it completely evaporated. Which point should he label as the boiling point?

- A. A
- B. B
- C. C
- D. D

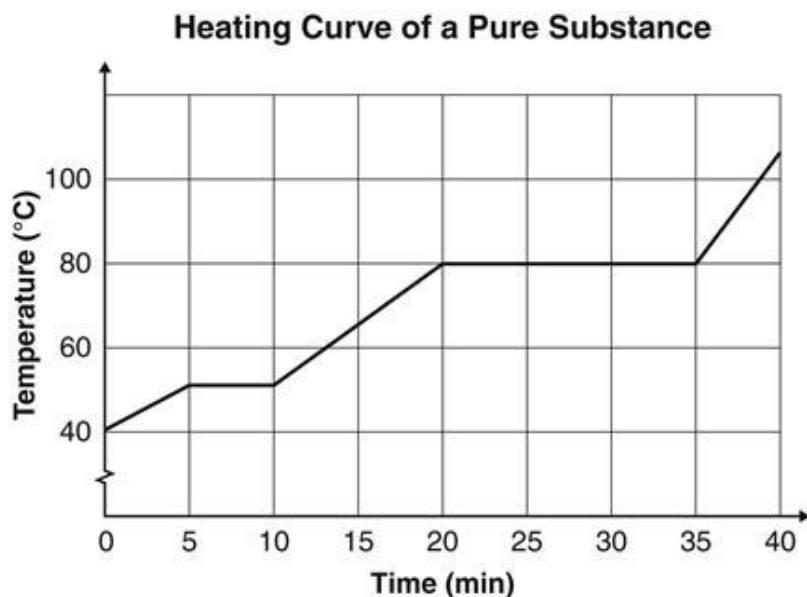
5. This illustration shows a generic phase diagram for an unidentified substance.



What does the point labeled T represent?

- A. boiling point
- B. melting point
- C. conditions under which the material exists in all three phases
- D. conditions under which the phase of the material cannot be determined

6. The graph shows phase changes for a pure substance when heat is added at a constant rate.



During which time interval does a phase change occur while energy is absorbed?

- A. 0–5 minutes
B. 10–20 minutes
C. 20–35 minutes
D. 35–40 minutes
7. A student is given a walnut sample measuring 0.200 g. The walnut sample was ignited and used to heat 10.0 mL of water. As a result, the water temperature increased by 4°C. Given the specific heat for water is 4.18 J/g·°C, what is the energy content, in joules per gram, of a walnut?
- A. 8.36×10^2 J/g
B. 1.67×10^2 J/g
C. 3.34×10^1 J/g
D. 3.32×10^1 J/g
8. A peanut was burned to determine its energy content. The peanut's mass was 0.609 g before and 0.053 g after burning. The temperature of 200.0 mL of water in a calorimeter increased 14.5°C. If the specific heat of water is 4.18 J/g·°C, then the amount of energy of the nut is
- A. 1770 J.
B. 12,100 J.
C. 21,800 J.
D. 93,600 J.
9. During an experiment, a class heated a balloon that had an initial circumference of 25 cm. The circumference increased to 27 cm. Which is the best conclusion that can be drawn?
- A. The molecules inside the balloon lost energy to the outside.
B. The molecules inside the balloon gained energy from the heat.
C. The energy of the molecules inside the balloon remained the same.
D. The molecules inside the balloon were escaping outside.

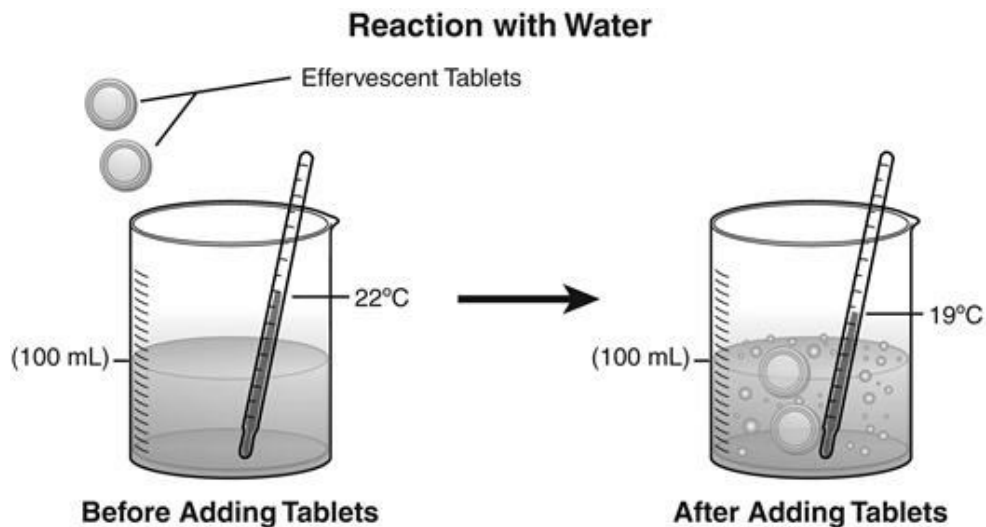
10. A glass cylinder contains a mixture of two gases that react with each other slowly. A piston can be raised or lowered inside the glass cylinder.



Which action will most likely increase the rate of reaction between the two gases in the cylinder?

- A. decreasing the temperature of the gases
 - B. removing the product as the gases react
 - C. increasing the volume by raising the piston
 - D. increasing the pressure by lowering the piston
11. A sample of helium gas is stored in a tank at 18 atm and 20°C. How do these conditions compare to the conditions of a gas at STP?
- A. lower pressure and lower temperature than STP
 - B. higher pressure and lower temperature than STP
 - C. lower pressure and higher temperature than STP
 - D. higher pressure and higher temperature than STP
12. A helium-filled balloon is released into the atmosphere. As the balloon rises, which would most likely increase and cause the balloon to burst?
- A. the mass of the helium
 - B. the density of the helium
 - C. the volume of the helium
 - D. the temperature of the helium
13. A researcher measures the temperature of a hot gas. This observation is used to determine which property of the gas molecules?
- A. average kinetic energy
 - B. elastic potential energy
 - C. movement of thermal energy
 - D. transformation of chemical energy
14. A sample of 0.500 mol of hydrogen has a pressure of 3.00 atm and a temperature of 799K. What is its volume?(Ideal gas law: $PV = nRT$, $R = 0.082 \text{ atm}\cdot\text{L}/\text{mol}\cdot\text{K}$)
- A. 10.9 L
 - B. 32.8 L
 - C. 73.2 L
 - D. 98.4 L

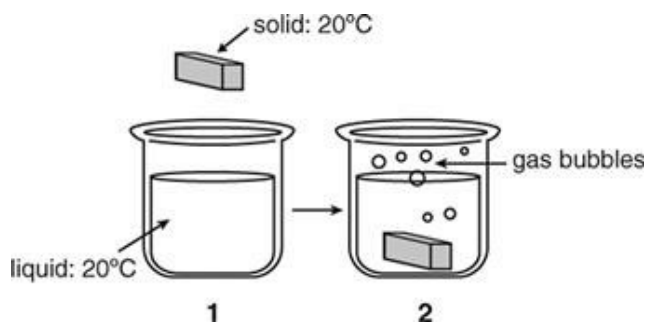
15. Belinda investigated the reaction that occurred when two effervescent tablets were put into a beaker containing 100 mL of water. She observed that the tablets fizzed and released gas bubbles. The tablets dissolved. The temperature of the water went from 22°C to 19°C.



Which is the best conclusion for this experiment?

- A. The energy conversion that occurred in this beaker involved the nuclei of the atoms of the tablets.
 - B. An endothermic reaction occurred because heat energy was absorbed from the water.
 - C. A physical change occurred when the tablets dissolved in the water.
 - D. The gas came from boiling water in the beaker.
16. **A teacher demonstrates a chemical reaction. A student observes that the test tube in which the reaction occurs becomes warm. What is the source of the thermal energy generated by the reaction?**
- A. energy stored in the reactants
 - B. breaking bonds of the reactants
 - C. kinetic energy absorbed by the reaction
 - D. potential energy absorbed by the reaction
17. **Which is evidence of a chemical reaction?**
- A. the light produced by magnesium when burned
 - B. the evaporation of water from a solution
 - C. the fizzing of a soft drink
 - D. the heat from a light bulb

18. A student placed a solid in a liquid, which produced the results shown in the following diagram.



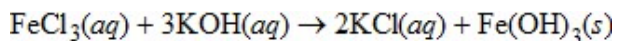
Which of the following most likely took place?

- A. a chemical reaction
 - B. a phase change
 - C. a nuclear reaction
 - D. a destruction of mass
19. Which activity is an example of a chemical change?
- A. sugar dissolving in water
 - B. water evaporating in air
 - C. lighting a match
 - D. freezing water

20. Which of these involves the formation of a new chemical substance?

- A. evaporation of gasoline
- B. mixing salt and pepper
- C. dissolving sugar in tea
- D. rusting of an iron chain

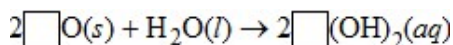
21. Iron(III) chloride reacts with potassium hydroxide to yield potassium chloride and iron(III) hydroxide. The overall reaction is shown below.



What is the ionic equation for this reaction?

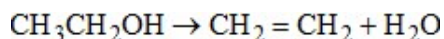
- A. $\text{Fe}^{3+}(aq) + 3\text{OH}^-(aq) \rightarrow \text{Fe}(\text{OH})_3(s)$
- B. $\text{Fe}^{3+} + 3\text{Cl}^- + 3\text{K}^+ + 3\text{OH}^- + 3\text{H}^+ \rightarrow \text{Fe}(\text{OH})_3 + 3\text{K}^+ + 3\text{Cl}^-$
- C. $\text{Fe}^{3+}(aq) + 3\text{Cl}^-(aq) + 3\text{K}^+(aq) + 3\text{OH}^-(aq) \rightarrow \text{Fe}(\text{OH})_3(s) + 3\text{K}^+(aq) + 3\text{Cl}^-(aq)$
- D. $\text{Fe}^{3+}(aq) + 3\text{Cl}^-(aq) + 3\text{K}^+(aq) + 3\text{OH}^-(aq) \rightarrow \text{Fe}^{3+}(\text{OH})_3(s) + 3\text{K}^+(aq) + 3\text{Cl}^-(aq)$

22. Which element should be filled in to make this equation correct?



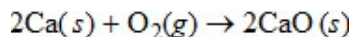
- A. Ca
- B. S
- C. C
- D. N

23. The chemical reaction shows the production of ethene and water from ethanol.

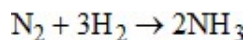


What is the percent yield if this reaction produced 55.0 g of ethene from 100.0 g of ethanol?

- A. 3.6%
 - B. 55%
 - C. 61%
 - D. 90%
24. How many grams of calcium oxide will be produced in a closed vessel containing 20.0 kg of calcium and 20.0 kg of oxygen gas if the reaction goes to completion? (atomic mass of calcium = 40.1 amu)

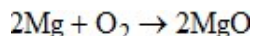


- A. 20.0 kg
 - B. 32.0 kg
 - C. 36.0 kg
 - D. 40.0 kg
25. Hydrogen and nitrogen react to produce ammonia gas as shown in the following chemical equation.



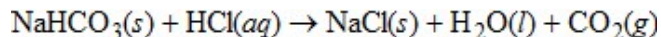
How many grams of hydrogen must react to produce 31.5 grams of ammonia?

- A. 5.60
 - B. 3.73
 - C. 2.49
 - D. 1.64
26. When magnesium is burned in the presence of oxygen, it produces magnesium oxide according to the following chemical equation.



If 3.45 grams of Mg are burned, how many grams of MgO are produced?

- A. 8.69
 - B. 5.72
 - C. 4.35
 - D. 3.45
27. The chemical equation shows the reaction between sodium bicarbonate and hydrochloric acid to produce sodium chloride, water, and carbon dioxide.



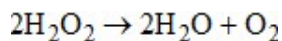
A teacher reacts 84.0 g of sodium bicarbonate with excess hydrochloric acid. What is the percent yield for sodium chloride if 56.0 g of sodium chloride is produced?

- A. 4.20%
- B. 8.01%
- C. 92.0%
- D. 95.8%

28. A compound is analyzed and determined to be 30.4% nitrogen and 69.6% oxygen. What is the empirical formula of the compound?

- A. NO
- B. NO₂
- C. N₂O
- D. N₂O₂

29. Hydrogen peroxide(H₂O₂) naturally reacts to produce water(H₂O) and oxygen(O₂).



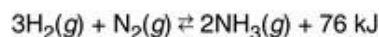
When manganese(IV) oxide(MnO₂) is mixed with H₂O₂ the reaction rate increases and the same products are formed. What is the most likely function of MnO₂ in this chemical reaction?

- A. reactant
- B. catalyst
- C. electron donor
- D. limiting reagent

30. Two gases chemically react when they are mixed with each other. Equal masses of each gas are placed in a sealed chamber. Which change to the reaction chamber will most likely increase the reaction rate of the gases?

- A. adding an inert gas to the chamber
- B. reducing the volume of the chamber
- C. increasing the surface area of the chamber
- D. reducing the temperature inside the chamber

31. The equation shows a reaction at equilibrium.



Which of the following describes what happens if NH₃ is added to the system?

- A. Equilibrium is restored as the reaction shifts toward the reactants.
- B. Equilibrium is restored as the reaction shifts toward the products.
- C. Equilibrium is restored as more heat energy is released from the system.
- D. Equilibrium is restored as the concentration is increased to the products.

32. What happens when a chemical reaction reaches equilibrium?

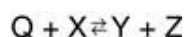
- A. The amounts of reactants and products remain constant because the reaction stops.
- B. The rate of the forward reaction is the same as the rate of the reverse reaction.
- C. The reaction stops because the concentration of reactants is too low to sustain it.
- D. The reaction reverses so some of the products are converted back into reactants.

33. **How does the change in components of a chemical reaction at equilibrium differ from the change in components when the reaction is not at equilibrium?**
- A. At equilibrium, there is no change in components while there is always a change when the reaction is not at equilibrium.
 - B. At equilibrium, there is a change in components while there is never a change when the reaction is not at equilibrium.
 - C. At equilibrium, the rate of product formation is greater than it is in a nonequilibrium condition.
 - D. At equilibrium, the rate of product formation is lower than it is in a nonequilibrium condition.

34. **Which reaction, when at equilibrium, would be unaffected by a change in pressure?**

- A. $\text{N}_2(g) + \text{O}_2(g) \rightleftharpoons 2\text{NO}(g)$
- B. $\text{N}_2\text{O}_4(g) \rightleftharpoons 2\text{NO}_2(g)$
- C. $2\text{CO}(g) + \text{O}_2 \rightleftharpoons 2\text{CO}_2(g)$
- D. $\text{COBr}_2(g) \rightleftharpoons \text{CO}(g) + \text{Br}_2(g)$

35. **The diagram represents a reversible equation at equilibrium.**



Which of these actions will shift the equilibrium to the right?

- A. remove Q
 - B. add X
 - C. remove X
 - D. add Y
36. **How does increasing the temperature of an endothermic gas state reaction without changing the pressure affect the equilibrium?**
- A. shift equilibrium to the right
 - B. shift equilibrium to the left
 - C. no effect on equilibrium because the reaction is endothermic
 - D. no effect on equilibrium because the reaction is in the gas state

37. **What is the pH for a solution that has an H^+ ion concentration of $1.0 \times 10^{-6} \text{ M}$?**

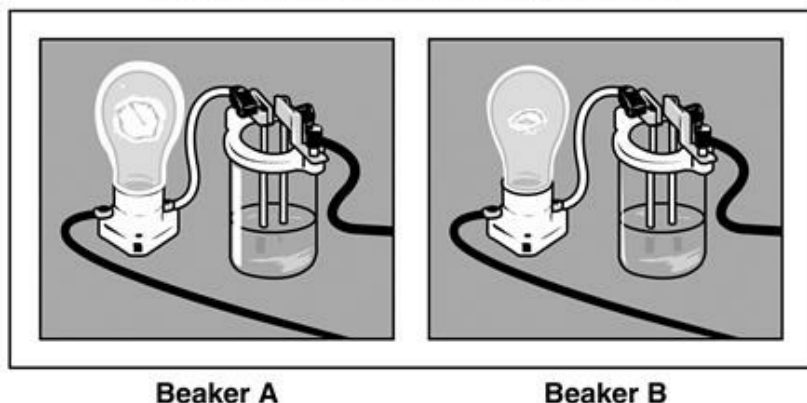
- A. 10
- B. 14
- C. 6
- D. 8

38. **A solution is classified as a weak base. Which of these could be the pH of the solution?**

- A. 2
- B. 6
- C. 10
- D. 13

39. What are the products of a reaction between a strong acid and a strong base?
- A. a salt and water
 - B. two different elements
 - C. a weak acid and a weak base
 - D. hydrogen ions and hydroxide ions
40. Beaker A contains 0.10 M hydrochloric acid, HCl. Beaker B contains 0.10 M acetic acid, $\text{HC}_2\text{H}_3\text{O}_2$. When an indicator light is placed into each beaker, the light at Beaker A is brighter than at Beaker B. The diagram shows a conductivity indicator light setup.

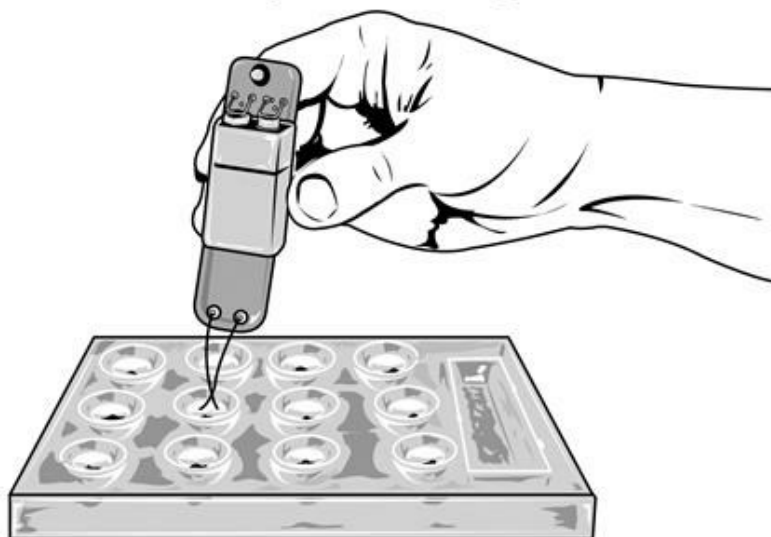
Conductivity Indicator Light Setup



- Why is the light in Beaker B less bright than the light placed in Beaker A?
- A. The solution in Beaker B is a strong acid.
 - B. The solution in Beaker B is a neutral solution.
 - C. The solution in Beaker B is a strong base.
 - D. The solution in Beaker B is a weak acid.
41. What is the concentration of a solution if 2.0 moles of sodium chloride is dissolved in 0.50 liter of water?
- A. 0.5 M
 - B. 1.0 M
 - C. 2.0 M
 - D. 4.0 M
42. What is the molarity when 2.80 g of $\text{Mg}(\text{NO}_3)_2$ are dissolved in enough water to make 75 mL of solution?
- A. 0.25 M
 - B. 0.29 M
 - C. 0.43 M
 - D. 1.8 M

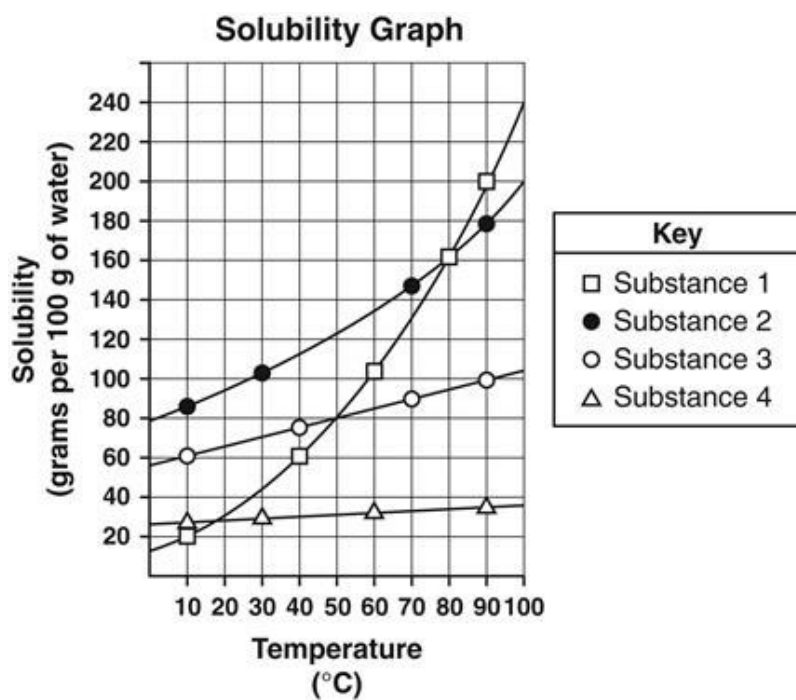
43. The density of 200 mL of water was determined, and then 20 grams of sugar was dissolved in the water. The student determined the density of the sugar-water solution and recorded the collected data in a table. The sugar in this investigation is
- A. the solute.
 - B. undergoing chemical change.
 - C. the solvent.
 - D. changing from a solid to a gas.
44. A student dissolved an unknown substance in distilled water and observed that the light indicator did not shine brightly. Which substance was most likely dissolved in the water?

Conductivity Tester with Light Indicator



- A. calcium chloride(CaCl_2)
- B. ethyl alcohol($\text{C}_2\text{H}_5\text{OH}$)
- C. acetic acid(CH_3COOH)
- D. hydrogen chloride(HCl)

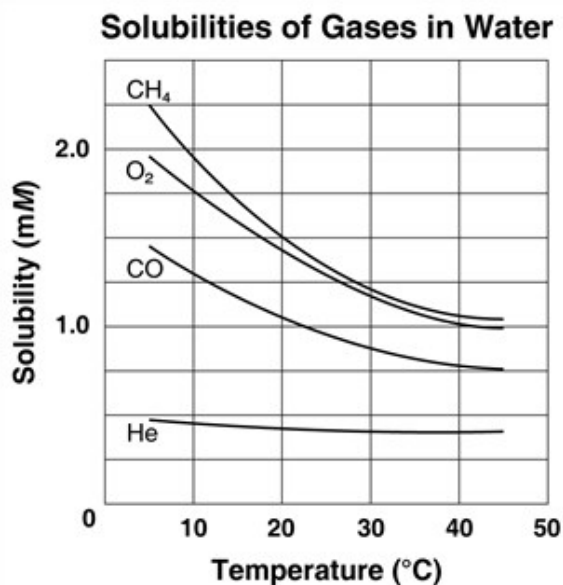
45. Use this solubility graph to answer the question below.



Which substances will form a saturated solution when a 160-gram sample of the substance is stirred into 100 g of water at 80°C?

- A. Substance 1 only
- B. Substance 2 only
- C. Substances 1 and 2
- D. Substances 1, 2, 3, and 4

46. Use the solubility diagram to answer the following question.

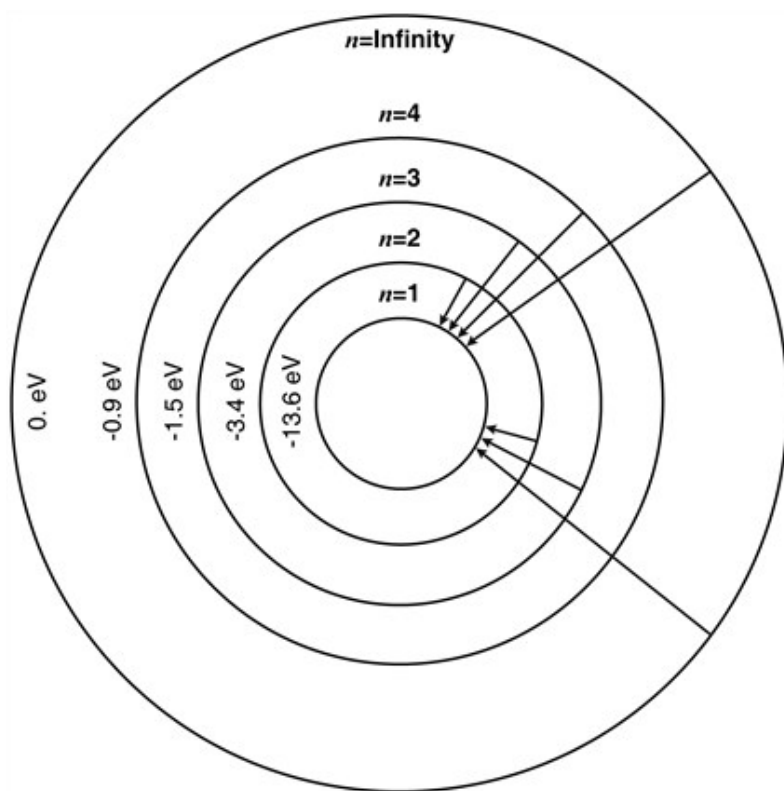


Which term correctly describes a solution containing 1.25 millimoles of carbon monoxide per liter of water at 10°C?

- A. oversaturated
 - B. saturated
 - C. supersaturated
 - D. unsaturated
47. Kira dissolved different solutes in 100 mL of water. She recorded the amount of each solute that would dissolve at different temperatures. What information will this investigation confirm?
- A. The effect of the solvent on the temperature of the solution.
 - B. The effect of temperature on the amount of solute dissolved.
 - C. The temperature of the solution depends on the kind of solute used.
 - D. The temperature of the solution is dependent on the amount of solute.
48. A student is dissolving sugar in water to make candy. She notices that sugar lumps are forming at the bottom of the pan. What could she do to help more of the sugar dissolve?
- A. heat the solution
 - B. cool the solution
 - C. add more sugar to the pan
 - D. take some water out of the pan
49. An atom becomes an ion with a -1 charge because the atom
- A. gains one electron.
 - B. loses one electron.
 - C. gains one proton.
 - D. loses one proton.

50. **What part of an atom orbits around the center of the atom?**
- A. proton
 - B. nucleus
 - C. neutron
 - D. electron
51. **How do the mass and size of the nucleus of an atom compare to the mass and size of an entire atom?**
- A. The masses are similar, but the nucleus is much smaller.
 - B. The volumes are similar, but the nucleus has much less mass.
 - C. The masses are similar, but the nucleus is much larger.
 - D. The volumes are similar, but the nucleus has much more mass.
52. **The element lanthanum has an isotope with an atomic mass of 138.9 amu and an abundance of 99.91%. A second isotope has an atomic mass of 137.9 amu and an abundance of 0.09%. What is the average atomic mass of lanthanum?**
- A. 138.4 amu
 - B. 138.8 amu
 - C. 138.9 amu
 - D. 139.0 amu
53. **Which properties are most affected by the number of electron orbitals around a non-metal atom?**
- A. nuclear
 - B. physical
 - C. chemical
 - D. radioactive

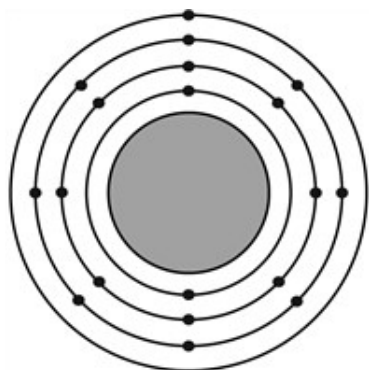
54. This diagram shows several possible electron transitions.



Which of the following transitions produces light with the longest wavelength?

- A. $2 \rightarrow 1$
- B. $3 \rightarrow 1$
- C. $4 \rightarrow 2$
- D. $4 \rightarrow 3$

55. What is the electron configuration of this atom?



- A. $1s^2 2s^8 3s^8 4s^1$
- B. $1s^2 2s^2 2p^6 3d^8 4s^1$
- C. $1s^2 2s^2 2p^6 2d^8 3s^1$
- D. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$

56. **What is the best description of the shape of atomic electron orbitals in the electron cloud model?**

- A. circles or two-dimensional lobes
- B. spherical shells around the nucleus
- C. layer of nested spheres surrounding the nucleus
- D. spherical or multiple-lobed three-dimensional patterns

57. **Light is emitted when electrons**

- A. move from one atom to another.
- B. collide with one another, releasing energy.
- C. move from a lower energy level to a higher energy level.
- D. move from a higher energy level to a lower energy level.

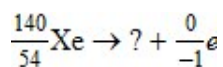
58. **What causes the emission spectrum of an element?**

- A. movement of electrons from a lower energy state to a higher energy state
- B. movement of photons from a lower energy state to a higher energy state
- C. movement of electrons from a high energy state to a lower energy state
- D. movement of photons from a high energy state to a lower energy state

59. **The half-life of uranium-238 is 4.5 billion years. The half-life of potassium-40 is 1.25 billion years. A rock is found with half of its original potassium-40 content. How much of its original uranium-238 content remains in the rock?**

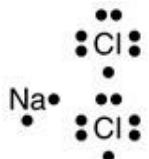
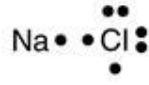

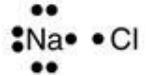
- A. more than 50%
- B. between 25% and 50%
- C. between 12.5% and 24.9%
- D. less than 12.5%

60. **Which atom is the product of beta decay of xenon-140?**



- A. $\frac{139}{54}\text{Xe}$
- B. $\frac{140}{53}\text{I}$
- C. $\frac{140}{55}\text{Cs}$
- D. $\frac{141}{55}\text{Cs}$

61. Which of the following is the best Lewis dot structure for the product of sodium and chlorine?

- A. 
- B. 
- C. 
- D. 

62. The formation of an ionic bond involves the

- A. transfer of electrons.
- B. sharing of neutrons.
- C. transfer of neutrons.
- D. sharing of protons.

63. The diagram below represents the Lewis dot structure for fluorine.



Which statement best describes the Lewis dot structure for fluorine?

- A. Fluorine has a total of seven electrons.
- B. Fluorine generally forms an ion by losing one electron.
- C. Fluorine tends to form seven ionic bonds.
- D. Fluorine has one electron available to form a covalent bond.

64. Which statement describes what occurs when large biomolecules such as glucose, $C_6H_{12}O_6$, form?

- A. polymerization is initiated
- B. oxygen and hydrogen will bond first
- C. electrons are shared to form covalent bonds
- D. electrons are transferred to form ionic bonds

65. Water moves by capillary action through soil from moist areas to dry areas. Which property of water is most responsible for this capillary action?

- A. Water is a polar molecule.
- B. Water contains an oxygen atom.
- C. Water has a high surface tension.
- D. Water has a high specific heat.

66. In the liquid state, water molecules are held together by weak hydrogen bonds. What is an outcome of this type of bonding?
- A. Water molecules are heavier as liquids than they are as solids or gases.
 - B. A sample of water in the liquid state has a measurable volume.
 - C. It takes more heat energy to vaporize water than it would if the bonds did not exist.
 - D. The bonds in water molecules show a tendency to break apart and form atoms.
67. What is the chemical formula of a compound with the IUPAC name of aluminum cyanide?
- A. $\text{Al}(\text{CN})_3$
 - B. AlCN
 - C. Al_3CN
 - D. Al_3CN_3
68. What is the chemical formula of chromium(VI) sulfate?
- A. CrSO_4
 - B. $\text{Cr}(\text{SO}_4)_3$
 - C. $\text{Cr}_2(\text{SO}_4)_3$
 - D. Cr_6SO_4
69. What is the chemical formula of cobalt (II) hydroxide?
- A. $\text{Co}(\text{OH})_2$
 - B. $\text{Co}_2(\text{OH})$
 - C. CoH_2
 - D. $\text{Co}_2\text{H}_2\text{O}$
70. What is the IUPAC name for the compound H_2SO_4 ?
- A. sulfuric acid
 - B. hydrogen sulfide acid
 - C. dihydrogen tetrasulfate
 - D. dihydrogen sulfur tetraoxide
71. Which of the following best explains the relationship between electrons and thermal conductivity in metals?
- A. Electrons move slower, which allows for thermal conductivity.
 - B. Electrons are less concentrated to allow for increased thermal conductivity.
 - C. Electrons form weak covalent bonds to allow for thermal conductivity.
 - D. Electrons are delocalized, which allows for thermal conductivity.

72. **The ability of electrons to move freely in a metal allows heat to be conducted more quickly than in elements with electrons that are not mobile. Which of the following is a result of the ability of electrons in metals to flow freely among the atoms of metals?**
- A. Mobile electrons allow metals to have low boiling points.
 - B. Mobile electrons allow metals to have low melting points.
 - C. Mobile electrons allow metals to be good conductors.
 - D. Mobile electrons allow metals to be soft materials.
73. **Metal atoms exist as a lattice of metal ions, which have lost their outer electrons only temporarily. When the electrons are loose, they all repel. Which of the following properties does this temporary repelling by electrons address?**
- A. It helps explain the behavior of all atoms.
 - B. It helps explain the electron interaction with protons.
 - C. It helps explain how metals conduct electricity.
 - D. It helps explain why metals bond.
74. **Ductility is the ability of a metal to be drawn into wire. Which of these best explains why metals have high ductility?**
- A. Electrons are in tight fixed positions.
 - B. Electrons are allowed to move freely.
 - C. Electrons absorb and release light.
 - D. Electrons move heat quickly.
75. **Which metalloid is used in solar cells and computer chips?**
- A. silicon
 - B. silver
 - C. arsenic
 - D. antimony
76. **The electron configuration for an atom is $[Xe]6s^24f^{14}5d^1$. What element does this configuration represent**
- A. lanthanum
 - B. hafnium
 - C. lutetium
 - D. yttrium
77. **Which of the following elements is the least electrically conductive?**
- A. sodium
 - B. tungsten
 - C. zinc
 - D. argon

78. **The Periodic Table of the Elements is useful for revealing patterns and trends in the elements. Which statement accurately describes a pattern in the size of atomic radii in the Periodic Table of the Elements?**
- A. Atomic radii decrease from left to right across a period and decrease from top to bottom in a group.
 - B. Atomic radii increase from left to right across a period and increase from top to bottom in a group.
 - C. Atomic radii decrease from left to right across a period and increase from top to bottom in a group.
 - D. Atomic radii increase from left to right across a period and decrease from top to bottom in a group.
79. **Going from left to right in the periodic table, the atomic radius decreases. Which of the following explains the atomic radii trend of elements across a period?**
- A. There is an increase in the number of electron shells.
 - B. There is a decrease in the number of electron shells.
 - C. The attraction increases between the nucleus and the outer electrons.
 - D. The attraction decreases between the nucleus and the outer electrons.
80. **Element X is a good conductor of electricity. Which of the following most likely describes other elements that are good electrical conductors?**
- A. all elements in the same row of the periodic table as X
 - B. all elements in the same column of the periodic table as X
 - C. all elements that can be combined with X to form ionic compounds
 - D. all elements that can be combined with X to form covalent compounds
81. **As he developed his periodic table, Mendeleev grouped the elements lithium, sodium, and potassium together. What observation was likely a factor in his decision to group these elements?**
- A. They all form hydroxide compounds that are very caustic.
 - B. Their mass numbers are almost identical.
 - C. Their atomic numbers are separated by eight units.
 - D. They all have a single electron in their highest energy level.
82. **Group 17 (7A), the halogens, includes fluorine (F), chlorine (Cl), bromine (Br), iodine (I), and astatine (At). Which statement is most accurate concerning group 17 (7A) on the periodic table?**
- A. They have 1 valence electron.
 - B. They are extremely reactive.
 - C. They are metals.
 - D. They are inert.