## Ch.11-Q1+Q2 Revisin Sheet

# **Multiple Choice**

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

 1.	Almost all of Earth's atmosphere is made up a. synthetics b. metals	of c. nonmetals d. metalloids
 2.	<ul> <li>A physical property of zinc metal is</li> <li>a. whether it burns</li> <li>b. how it reacts with nitrogen gas</li> <li>c. its color</li> <li>d. whether it changes when placed into a</li> </ul>	cid
 3.	Which of the following compounds can be a. the dihydrate of calcium sulfate b. hygroscopic alum	used as a drying agent? c. CuSO4 ·5H2O d. calcium chloride dihydrate
 4.	Which of the following materials cannot be a. solution b. element	broken down into a simpler form? c. compound d. mixture
 5.	The properties of a compound are the a. identical to b. similar to	e properties of the elements that form it. c. different from d. derived from
 6.	If 14 atoms of carbon react with 28 atoms of contained in the carbon dioxide that is prod a. 42 b. 14	f oxygen to form carbon dioxide, how many atoms are duced? c. 28 d. 21
 7.	A certain element is a gas and does not co possible number of valence electrons for th a. 1 b. 3	nduct electricity or heat. Which of the following is a e atoms of this element? c. 6 d. 2
 8.	Bromine is a typical nonmetal. A bromide ic a. impossible to compare with b. the same size as	n is a bromine atom. c. smaller than d. larger than
 9.	Light is released when an electron moves from resulting spectrum is a(n) spectrum. a. excitation b. absorption	om higher energy levels to a lower energy level. The c. lower energy d. emission

\_\_\_\_\_ 10. Matter that is large enough to be seen is \_\_\_\_\_.

	a. macroscopic b. submicroscopic	c. d.	massive a scientific model
 11.	Noble gases a. form no compounds that occur natural b. form compounds easily c. form no compounds d. do not obey the octet rule	ly in	the environment
 12.	According to the law of conservation of ma 146 g of hydrogen chloride, how many gra a. 4.0 g b. 142 g	atte ms c c. d.	r, if 4.0 g of hydrogen react with chlorine to produce of chlorine reacted? 150 g 146 g
 13.	When ice melts and becomes liquid water, a. chemical change b. chemical property	it ho c. d.	as undergone a physical change physical property
 14.	An example of a pure substance in everyd a. sugar b. pond water	ay li c. d.	fe is a cola drink concrete
 15.	The atomic number of chlorine is 17. How n a. 17 b. 7	nany c. d.	y valence electrons does an atom of chlorine have? 8 2
 16.	Compare the maximum number of electro could be in sublevel 4d. a. They are the same. b. There are more in 3d.	ns p c. d.	ossible in sublevel 3 <i>d</i> with the maximum number that There are more in 4 <i>d</i> . They are impossible to compare.
 17.	Most transition metals have oxidation a. no b. only one	stat c. d.	te(s). two multiple
 18.	Classification based on measurements is so a. qualitative b. composed	iid to c. d.	o be quantitative observed
 19.	Which of the following liquids is most volatile a. alcohol b. water	e? c. d.	cooking oil motor oil
 20.	The is where the electron is most likely a. orbit b. energy level	r to l c. d.	oe found. electron cloud electron orbit

21.	The only subatomic particle tha	t does not carry an electrie	c charge is the .
	/	/	

- a. neutron
- b. electron

- c. proton
- d. nucleus
- 22. A colorless, odorless gas combines with a magnetic, metallic element. What can you predict about the product?
  - a. It will also be magnetic.
  - b. The compound will be shiny and odorless.
  - c. It is impossible to predict its specific properties.
  - d. A gas and a solid produce a liquid.
- 23. If an atom contains six energy levels, how many sublevels does it contain?
  - a. four c. one b. two d. six
- 24. An example of a chemical formula is \_\_\_\_\_ a. H<sub>2</sub>SO<sub>4</sub> c. Na b. 4.5 g/mL d. d = 13.6 g/L
- 25. Active metals are in the \_\_\_\_\_ region of the periodic table. c. d a. f b. s d. p
- 26. Which is a possible last sublevel for an element found in Group 18?
  - a. 4p<sup>3</sup> c. 4d<sup>8</sup> b. 3p<sup>6</sup> d. 4s<sup>2</sup>
- 27. The correct way to arrange the three forms of electromagnetic radiation listed below, from highest to lowest frequency, is \_\_\_\_\_.
  - a. ultraviolet > visible > infrared
    - c. infrared > ultraviolet > visible
    - b. visible > ultraviolet > infrared

b. crystal

- d. infrared > visible > ultraviolet
- 28. Lithium has much less attraction for any valence electrons than does fluorine. Atoms of these two elements would form \_\_\_\_\_ bonds. a. ionic
- c. covalent
- d. molecular
- 29. The most important alloy of zinc contains copper and is called \_\_\_\_\_.
  - a. zinc oxide c. steel
  - b. brass d. slag
- 30. In a list of the densities of common materials, the one density that might not seem reasonable is \_\_\_\_
  - a. 1.000 g/mL c. 35 885 g/mL b. 0.45 g/mL d. 2.54 g/mL

	31.	When reacting with an atom of fluorine, an atom of lithium will lose an electron and become a lithium			
		a. compound	c.	molecule	
		b. ion	d.	crystal	
	32.	In going from left to right in any given row in a decreases	n fh C	e periodic table, the size of atoms generally	
		b. stays the same	d.	changes randomly	
	33.	Transition metals have multiple oxidation sto chemical bonding.	ates	s because of the involvement of the electrons in	
		a. s	C.	d	
		D: 1	a.	ρ	
	34	A 26.0 a sample of a liquid was found to ba		a volume of 13.0 ml. What is the density of the liquid?	
	54.	a. 2.00 g/mL	C.	39.0 g/mL	
		b. 0.500 g/mL	d.	338 g/mL	
	35.	The inner transition elements are found in the $a$	e	block of the periodic table.	
		и. т b. p	d.	d	
	36.	Which of the following formulas is incorrect?	?		
		a. Ca(OH) <sub>2</sub>	C.	(NH4) <sub>2</sub> S	
		D. AIOH3	a.	Al2(5O4)3	
	37	The most unreactive group of elements is th			
	57.	a. transition elements	с.	alkali metals	
		b. halogens	d.	noble gases	
	38.	Horizontal rows of the periodic table are kno	owr	n as	
		b. families	d.	periods	
	39.	Water and hydrogen peroxide are both cor	mp	osed of atoms of hydrogen and oxygen. The	
		differences lie in the arrangement of t	the	atoms.	
		<ul><li>b. composed</li></ul>	c. d.	macroscopic	
	40.	Which of the following are definitely in atom	ns c	of the same element?	
		a. 3 protons, 4 neutrons and 4 protons, 3 ne	eut	rons	
<ul> <li>b. 3 protons, 3 neutrons and 3 protons, 4 neutrons</li> <li>c. 4 protons, 4 neutrons and 3 protons, 4 neutrons</li> </ul>			rons		
		d. 3 protons, 3 neutrons and 4 protons,	4 r	neutrons	

#### Matching

Match each item with the correct statement below.

- a. alkali metal
- b. alkaline earth metal
- c. halogen
- \_\_\_\_\_ 41. Astatine is the largest of this family
- \_\_\_\_\_ 42. Fluorine, bromine, or iodine
- \_\_\_\_\_ 43. An element found in Group 2
- \_\_\_\_\_ 44. Sodium or cesium
- \_\_\_\_\_ 45. An element found in Group 1 of the periodic table
- \_\_\_\_\_ 46. Magnesium or barium

Match each statement with the correct item below.

- a. s, p, d, or f within an energy level d. lanthanide or actinide
- b. can hold a maximum of two electrons e. discovery led to electron cloud model
- c. 1s<sup>2</sup>2s<sup>2</sup>2p<sup>6</sup>3s<sup>2</sup>3p<sup>6</sup>
- \_\_\_\_\_ 47. electron configuration
- \_\_\_\_\_ 48. Heisenberg uncertainty principle
- \_\_\_\_\_ 49. inner transition element
- \_\_\_\_\_ 50. orbital

#### Problem

Listed below are some imaginary data for a series of compounds. Based on what you have learned, predict whether each compound is probably ionic (I) or covalent (C). If the information given might apply to either kind of compound, put a question mark (?).

A. Ionic B. covalent

- 51. Is a hard, rough crystal.
- 52. Is a gas at room temperature.
- 53. Has a melting point of 1650°C.

Write the formula and the name for the compound formed when the following atoms or groups of atoms combine with each other.

54. sodium and oxygen

A. Na O; sodium oxide C. Na<sub>3</sub>O2; sodium oxide B. Na<sub>2</sub>O; sodium oxide D. Na<sub>4</sub>O; sodium oxide

55. magnesium and phosphorus

A. Mg<sub>2</sub>P<sub>3</sub>; magnesium phosphide B. Mg<sub>5</sub>P<sub>3</sub>; magnesium phosphide C. Mg<sub>3</sub>P<sub>2</sub>; magnesium phosphide D. Mg<sub>3</sub>P<sub>4</sub>; magnesium phosphide

56. aluminum and carbonate

A. Al2(CO3)3; aluminum carbonateB. Al3(CO3)2; aluminum carbonateC. Al2(CO3)5; aluminum carbonateD. Al2(CO5)3; aluminum carbonate

Nitrogen and oxygen combine with each other to form a series of compounds. This chart summarizes laboratory research done on this series of compounds. From the data supplied, calculate the empirical and molecular formulas for each oxide listed.

Compound	Percentage Nitrogen	Percentage Oxygen	Molecular Mass
А	63.6	36.4	44.01 u
В	30.4	69.6	46.00 u
С	36.9	63.1	76.01 u
D	25.9	74.1	108.01 u
E	46.7	53.3	30.01 u

57.	Compound B is		(Empirical and molecular formulas are the same.)			
	A. NO <sub>2</sub>	B. NO	C. NO <sub>3</sub>	D. N <sub>2</sub> O3 <sub>2</sub>		
58.	Compound E is		(Empirical and	d molecular formulas are the same.)		
	A. NO <sub>2</sub>	B. NO	C. NO <sub>3</sub>	D. N <sub>2</sub> O3 <sub>2</sub>		

### Modified True/False

Indicate whether the statement is true or false.

- \_\_\_\_\_ 59. Conductivity in metals can be explained by what is called a <u>sea of electrons</u>.
- 60. All s orbitals are <u>spherical</u>.
- \_\_\_\_\_ 61. The maximum number of electrons in any p sublevel is <u>six</u>. \_\_\_\_\_\_
- \_\_\_\_\_ 62. A dipole interaction takes place when the positive end of one polar molecule attracts the <u>positive</u> end of a second polar molecule. \_\_\_\_\_\_
- \_\_\_\_\_ 63. Atoms form bonds in such a way as to produce the electron configuration of <u>a noble gas</u>.
- \_\_\_\_\_ 64. A <u>nonpolar</u> molecule may contain polar covalent bonds. \_\_\_\_\_
- \_\_\_\_\_ 65. The geometry of alkene molecules is rigid because of the presence of a <u>double</u> bond.

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