



## Paper 2:

## True/False

## Indicate whether the statement is true or false.

- 1. Carbon dioxide is an ionic compound.
- 2. Carbon dioxide is present at a higher concentration in air that is exhaled than in air that is inhaled.
- 3. The most abundant element in the universe is oxygen.
- 4. All of the noble gas elements except neon have eight electrons in their outermost energy level.
- 5. In covalent bonding, atoms can achieve a full octet of electrons by sharing electrons.
- 6. A typical potassium ion has a positive charge because it has lost an electron.
- 7. A crystal of the compound potassium fluoride consists of potassium and fluoride molecules.
- 8. 52. The formula for methane, CH4, indicates that each methane molecule contains one carbon atom and four hydrogen atoms.

## **Multiple Choice**

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

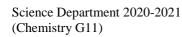
9.	What type of reaction takes place	e when fluorine	reacts with sodium bromide?
a.	Single-displacement	c.	Decomposition
b.	Combination	d.	Double-displacement

- 10. What is the probable product of a double-displacement reaction?
- a. A new compound and the replaced nonmetal
- b. A single compound
- c. A new compound and the replaced metal
- d. Two different compounds
- 11. Which of the following factors does not affect the rate of reaction?
- a. The temperature at which the reaction is carried out.
- b. The size of the container used.
- c. The physical state of the reactants.
- d. The amount of the reactants.
- 12. A formula unit of calcium bromide has two bromide ions corresponding to each calcium ion in the compound. What is the formula of calcium bromide?

a. CaBr c.  $Ca_2Br$  b.  $CaBr_2$  d.  $Ca_2Br_2$ 

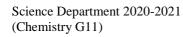
13. Which allotrope of carbon has a three-dimensional solid structure?

a. Coalb. Diamondc. Graphited. Granite



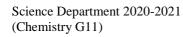


	A formula unit of magnesium chloride lampound. What is the formula of magnesi		o chloride ions corresponding to each magnesium ion in the aloride?
a.	MgCl	c.	$Mg_2Cl$
b.	$\mathrm{MgCl}_2$	d.	$Mg_2Cl_2$
15.	A substance will conduct an electric curr	rent if	it .
a.	is wet	c.	is covalent
b.	forms ions in solution	d.	consists of ions in the dry state
16.	Based on its position in the periodic tabl	e, the	most likely charge of an iodide ion is
a.	1+	c.	2+
b.	1-	d.	7-
17.	Which of the following formulas is inco	rrect?	
a.	$Al_2(SO_4)_3$	c.	$Ca(OH)_2$
b.	$AlOH_3$	d.	$(NH_4)_2S$
18.	Which of the following compounds can	be use	
a.	CuSO <sub>4</sub> ·5H <sub>2</sub> O	c.	calcium chloride dihydrate
b.	hygroscopic alum	d.	the dihydrate of calcium sulfate
	In order to separate two liquids from each		
a.	evaporate at the same temperature	c.	both be molecular substances
b.	evaporate at different temperatures	d.	both be inorganic compounds
20.	Which of the following pairs of compou	nds ar	e allotropes?
a.	sulfuric acid and nitric acid	c.	Cl <sub>2</sub> and Cl
b.	ozone and O <sub>3</sub>	d.	O <sub>2</sub> and O <sub>3</sub>
21.	is an allotrope of carbon.		
a.	Diamond	c.	Ozone
b.	Carbon monoxide	d.	Black phosphorus
	Nitrogen atoms each have five valence eolecule of $N_2$ ?	electro	ns. How many pairs of electrons must be shared in a
a.	1	c.	4
b.	3	d.	6
23.	When an atom loses an electron, it becomes	omes a	ion.
a.	negative	c.	neutral
b.	positive	d.	polyatomic





24.	Noble gases are sometimes used to pr	otect val	luable documents because they are
a.	molecular	c.	unreactive
b.	totally inert	d.	unstable
25.	The properties of a compound are	the p	
a.	similar to	c.	
b.	different from	d.	derived from
26.	Think of the terms <i>octet</i> , <i>octopus</i> , and	l octagoi	n. Infer the meaning of the prefix <i>oct</i>
a.	shape	c.	stable
b.	eight	d.	multi-
27.	A regular, repeating arrangement of a	toms, io	ns, or molecules is
a.	amorphous	c.	a compound
b.	a crystal	d.	impossible to break down
28.	The formula for iron(III) oxide, Fe <sub>2</sub> Cl	l <sub>3</sub> , shows	s that one unit of the compound contains iron atoms.
a.	2	c.	5
b.	3	d.	6
	The electron configuration of Na is [Napound when these elements react?	Ne]3s¹ aı	nd that of Cl is [Ne]3s <sup>2</sup> 3p <sup>5</sup> . What is the formula of the
a.	Na <sub>2</sub> Cl	c.	NaCl
b.	NaCl <sub>2</sub>	d.	$\mathrm{Na_{2}Cl_{2}}$
30.	Two atoms of bromine react with each	h other t	o form a(n) bond.
a.	covalent	c.	crystal
b.	ionic	d.	molecular
	The strong crystal structure of an ioni ints.	c compo	ound is one reason ionic compounds have melting
a.	high	c.	moderate
b.	low	d.	variable
	Which of the following elements is no		±
a.	antimony	c.	phosphorus
b.	arsenic	d.	silicon
	is an unreactive element.		** 11
a.	Hydrogen	c.	Helium
b.	Chlorine	d.	Sodium





		•	notes in metassium
a. b.	aluminum silicon	c.	potassium germanium
υ.	SHICOH	u.	germanium
35.	Elements in the same group ha	ave similar	
a.	electron structures	c.	densities
b.	numbers of electrons	d.	periods
36.	Almost all of Earth's atmosph	ere is made up o	f
a.	metals	c.	metalloids
b.	nonmetals	d.	synthetics
37.	Modern periodic law states the	at properties of e	elements repeat in a regular pattern when the elements are
arr	anged in order of increasing _	·	
a.	density	c.	atomic number
b.	atomic mass	d.	periodicity
38.	Which of the following eleme	ents is a metal?	
a.	Boron	c.	Magnesium
b.	Nitrogen	d.	Carbon
39.	Which of the following is an e	example of perio	dicity?
a.	eating breakfast	c.	writing a letter
b.	hitting a home run	d.	sneezing
40.	Dobereiner's classification sys	stem was based o	on groups of elements he called
a.	families	c.	groups
b.	periods	d.	triads
41.	Columns of the periodic table	are known as	<del>:</del>
a.	groups	c.	
b.	periods	d.	rows