Name: ____Period: ___Date:

Practice Quiz: Chemical Reactions

<u>Multiple Choice</u>: Write the letter representing the best answer in the blank space in front of each question.

Use	the	equation	below to	answer	questions	1	_	5.

		1,	
2Al + 3H ₂ SC	$o_4 \rightarrow Al(so_4)_3 + 3I$	H_2	
2			
2 1) Which	molecule(s) are on th	ie prod	uct side?
	a. Al and H ₂ SO ₄		c. Al, S, O, and H.
	(b)Al(SO ₄) ₃ and H ₂		d. The right side
Anni	1 165		
1 / 2) Which	molecule(s) are on th	ie react	ant side?
			c. Al, S, O, and H.
	b. Al(SO_4) ₃ and H ₂		d. The left side
A 3) What	does the '+' symbol m	ean?	
	a\'and'	c. 'forr	ns bonds with'
	a. 'and' b. 'turns into'	d. 'plus	s'
۸		u. p.u.	•
A 4) How n	nany oxygen atoms ar	e on the	e product side?
	a.12		c. 4
•	a. 12 b. 7		d. 3
\bigcirc			
5) How n	nany molecules of alu	minum	sulfate are on the reactant side?
	a. 3.		c. 1
	b. 2	(a.0
OWhich	of the fall and a star a	:- MOM	
<u>» 6</u> which	of the following ions		
	a. Calcium ion		(III) ion
Λ	b. Barium ion	d Sulfi	ide ion
り 7) Which	of the following ions	is NOT	an anion?
	a. Oxide ion		c. Carbonate ion
/	b. Lead ion		d. Carbide ion
ζ	Di peda ion		a. car blue ion
\wedge			
8) Which	of the following is a n	nonoate	omic ion?
	a. C4-	c. NH4	
	b. ClO-	d. P04	
)	_		
9) Which	of the following is a p	olyator	nic cation?
	a. $C_2O_2^{2-}$		c/NH4+
	4 L .	•	-

d. PO43-

ъ. ClO-

$\int 10$) What is the charge on Iron ((III) ion?	
a3	c. +2	
(0. +3	d. - 2	
(11) What do you call ions that a	re made up of more than one at	om?
a. Cations	c. Polyatomic ions	5111.
b. Neutral ions	d. Monoatomic ions	
A		
12) What is the name of the ion	A = 7 =	
a. Oxalate	c. Peroxide Co4	
b. Cyanide	d. Carbonate	
13) What is the name of the ion	that has the symbol MO 7-2	
	c. Vanadate	
<u> </u>	d. Cyanide	
0	_	
14) What is the only polyatomic	ion that has a positive charge?	
a. Cyanided (b, Ammonium	c. Sulfate d. Sodium	
V A. T.	u. oodium	8
15) In naming ionic compounds		
	c. The one with the shorter name	2
b. The anion	d. It doesn't matter	
16) Which of the following repro	esents the best chemical formula	a for the
compound calcium nitrate?	- 0 0	Z+ NO3
a. CaNO ₃	\bigcirc Ca(NO ₃) ₂	1003
b. $Ca(NO_2)_3$	d. Ca(NO ₃) ₃	
	-	
17) Which of the following repre	esents the best chemical formula	a for the
compound <u>ammonium carbo</u>	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	+ CO32=
a. (NH ₄)CO ₃	Q(),==-3	4 003
b. NH ₄ CO ₃	d. $NH_4(CO_3)_2$	
18) Which of the following repr	esents the best chemical formula	forthe
compound lead (IV) carbonat	te?	a for the b^{4+} CO_3^{2-} $b_2(CO_3)_4 \rightarrow Pb(CO_3)_2$ ate? Ba^{2+} $C_4 + O_1^2$
a. Pb ₂ CO ₃	c. Pb ₂ (CO ₃) ₄	D' 03
b. Pb ₄ CO ₃	c. $Pb_2(CO_3)_4$ (d) $Pb(CO_3)_2$	ba(CO) - (CO3)2
<u></u>	() 372	- 40 974
\sum 19) Which of the following is the	e correct formula for <u>barium citr</u>	ate? Ro2+ C. H-0,7
a. BaC ₆ H ₅ O ₇	c. Ba(C ₆ H ₅ O ₇) ₂	G 3 = 1
b. Ba ₂ C ₆ H ₅ O ₇	 . Ba ₃ (C ₆ H	₅ 0 ₇) ₂
A	_	
20) Which type of reaction brea	ks bigger molecules into smaller	molecules?
(a.)Decomposition b. Single displacement	c. Combustion t d. Synthesis	

_C _{21) W}	hich type of reaction	requires 02 as	a reactant?		
	a. Decomposition	requires 02 as	c. Lombustion		
	b. Single displace		d. Synthesis		
R					
½ 22) W	hich type of reaction i	replaces the ca	tion in an ionic com	oound?	
	a. Decomposition		c. Combustion		
	5. Single displacer	nent	d. Synthesis		
/ 200.44	00 +4	2 aruba			
molecule?	hich type of reaction s	starts out with	smaller molecules a	nd combines them to form	a larger
	a. Decomposition		c. Combustion		
	 b. Single displacer 	nent	d, Synthesis		
A					
24) Wi	nich type of reaction is	s shown by the	e equation below?		
	СН ₃ 0Н>	CO + 2H ₂			
	_				
	a.Decomposition		c. Combustion		
	b. Single displacen	nent	d. Synthesis		
			•		
\sim 25) Wh	nich type of reaction is	s shown by the	equation below?		
/- in as	6CO ₃ + 6 H	₂ 0> C ₆ H ₁₂ (0 ₆ + 60 ₂		
7 reve	<i>SE</i>		- · -		
	a. Decomposition		c.)Combustion		
	b. Single displacem	nent	d. Synthesis		
مه	_		-		
26) Wh	ich type of reaction is	shown by the	equation below?		
. \ 0	ich type of reaction is PbN03 + CaS04 - a. Decomposition	7 1			
10000	103 + Casu ₄	-> Pb ₂ SO ₄ + Ca	a(NO ₃) ₂	60	
No War	_				
Dix	a. Decomposition		c. Combustion		
7	b. Single displacem	ent	d. Synthesis		
ose the foll	lowing symbol to an	swer question	ns 27 through 30.		
3ſNF	I ₄) ₂ CrO ₄				
	-4,2 4	2			
27) How	v many atoms of hydr	(II)	. •		
<u> </u>	a, 4	ogen (H) are p	resent?		
	b. 8	(4) 34 C. 10			
12	5. 0	(u)24			
28) How	many atoms of chron	mium (Cr) ara	mwaa42		
	a. 1		hrezent,		
	b. 2	©3 d.4			
\bigcap		ui i			
<u> </u>	many atoms of nitro	gen (N) are pro	esent?		
•	a. 1	c. 3	oodit.		
α	b. 2	(d) 6			
	•	_			

20) How	many molecules of an	_	present?
	a. 1 b. 2 are the missing coeff	c. 3 6 icients in the follow	/ 1 0
	_c ₂ н ₅ он + <u>З</u> о ₂ -	$-> \frac{2}{2} \cos_2 + \frac{3}{2} H_2 0$	2C 2+C 6H = 62.H
	a. 0, 2, 2, 3 b. 1, 2, 2, 3	c. 0, 3, 2, 3 (d,1, 3, 2, 3	730 70
	t are the missing coeff	icients in the follow	ring equation?
	$_{c_3H_8} + 5_{0_2} - > 1$	<u>З</u> со ₂ + <u>4</u> н ₂ о	3C 3+C 8H = 8XH 1020
٨	a. 2, 4, 3, 4 b. 0, 5, 3, 4	c. 1, 6, 3, 4 d. 1, 5, 3, 4	1020 1030
A 33) What	t are the missing coeff	icients in the follow	ring equation?
	$P_4 + \frac{5}{2}O_2 - \frac{2}{2}P$	² 2 ⁰ 5	4P 4Z7
(a 1, 5, 2 b. 0, 5, 2	c. 1, 6, 3 d. 1, 5, 3	
234) What	t are the missing coeff	icients in the follow	ving equation?
	$2_{A1} + \underline{6}_{CH_3OH}>$	> <u>2 (</u> CH ₃ O) ₃ AI+ <u>3</u>	H ₂ bxC = 6C
$\overline{}$	a. 1, 3, 1, 1 b. 2, 5, 2, 3	c. 1, 6, 2, 3 d. 2, 6, 2, 3	241H 2490H
35) In the	e ionic compound zine	c phosphate (ZnPO ₄), which is the cation?
	a. P b. 0	c. 4 d. Zn	<u>≨</u>
II. Short Ans	swer		
chemical equ	ations.		following sentences into complete, balance
a. Lead (II) n	itrate reacts with cop	per metal ->	o Reaction

(See activity series)

c. tetracarbon decahydride reacts with oxygen gas ->

d. barium chloride reacts with potassium carbonate \rightarrow BaCl ₂ + K ₂ (O ₃ \rightarrow BaCO ₃ +2KCl Ba ²¹ Cl K ⁺ CO ₃ ²⁻
e. Iron (II) sulfide reacts with hydrogen chloride > FeS +2HCl -> FeCl ₂ + H ₂ S Fe ²⁺ S ²⁻ H ⁺ Cl ⁻
f. Zinc metal reacts with hydrogen sulfate \rightarrow $2n^{+}$ $H_{2}SO_{4}$ \rightarrow $H_{2}+$ $EnSO_{4}$ \rightarrow En^{+} $EnSO_{4}$
g. mercury (II) oxide breaks down into mercury metal and oxygen gas. Hg ²⁺ 0^2 \rightarrow 2 2 2 4 6 2 2 4 6 2 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 2 4 6 6 6 6 6 6 6 6 6 6
2. Balancing Equations. Balance the following equations
a. $Al_2O_3 + 3H_2SO_4 \rightarrow Al_2(SO_4)_3 + 3H_2O$ b. $4NH_3 + 5O_2 \rightarrow 4NO + 6H_2O$
cLi ₃ PO ₄ $\rightarrow 3$ Li +P + 2 O ₂
d. $2C_8H_{18} + 25O_2 \rightarrow 16CO_2 + 18H_{20}$
e. $2 \text{CuS} + 3 \text{O}_2 \rightarrow 2 \text{CuO} + 2 \text{SO}_2$
$f. \underline{16}_{Cr} + \underline{3}_{S_8} \rightarrow \underline{8}_{Cr_2S_3}$
$g.2$ NaOH \rightarrow Na ₂ O + H ₂ O
h. $_Al_2(SO_4)_3 + \underline{3}_{BaCl_2} \rightarrow \underline{2}_{AlCl_3} + \underline{3}_{BaSO_4}$
B. Lab Question: You heat a sample of potassium chlorate, after heating it changes color and looses mass. What type of reaction has taken place? What is the balanced chemical equation for this reaction? How could you prove the identity of the gaseous product?
K+ C103 KC103 D2 + KC10
capture and try to ignite the gas if it flairs up it is 02

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2	5		