lame	(print)	Name	· · · · · · · · · · · · · · · · · · ·	(sign)
Please show work for partial cre have no partial credit. Please grade it. (1 pts print AND sign of Part I MULTIPLE CHOICE. C Partial Credit for MC) (3 pts per	write anything you want gexam) Choose the one alternative	raded legibly. If I cannot comedify the that best completes the state of the completes the state of the state	t read your work, I ob	viously cannot
		al reaction are called the	•	1)
A) products.	B) chemicals.	C) precipitates.	D) reactants	
2) An acid added to a	base will produce a			2)
A) salt and hydroxic C) salt and water.	de ions.	B) stronger acid and D) salt and hydrogen		
A balanced chemica A) number of atoms C) number of moles		same B) mass of each com D) number of molecu	· •	3)
4) .Which type of reac	tion is $4Al + 3O_2 \rightarrow 2Al$	₂ O ₃ ?		4)
A) Combination C) Double-replacen	nent	B) Decomposition D) Single-replacement	nt	
5) What is the preferre	d name for Mg ₃ N ₂ ?			5)
A) Dimagnesium tri C) Magnesium nitrio		B) Magnesium trinitri D) Manganese nitrate		
6) Which of the follow	ing is a strong acid?			6)
B) carbonic acid (H C) hydrocholoric ac	$ m H_3O_2$, main ingredient of $ m 2~CO_3$, main ingredient of id (H Cl, main ingredient chin ingredient of aspirin)	coca cola)		
7) A solution with a pI	I of 1 is			7)
A) strongly basic	B) weakly basic	C) strongly acidic	D) weakly acidic	· /
8) Which group is the a A) Alkaline earth me C) Noble gases	nearest neighbor to the netals	oble gases in the period B) Alkali metals D) Halogens	ic table?	8)

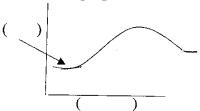
1.	Name the following 2 different molecules	Please note the element name given in parenthesis.
	The two molecules have one common elements	ment so only 3 element names are given. (useful
	information: mono, di, tri, tetra, penta)	(12 pts, 3 pts each)

S O ₂ (sulfur oxygen sodium)	compound is [(ionic) or (covalent)] (circle one)
name of compound	
Na ₂ O	compound is [(ionic) or (covalent)] (circle one)
name of compound	·
Chary the element exampled for any one	halaman (6 mta)

- 2. Show the element symbol for any one **halogen** (6 pts)
- a. Match the following by filling in the blank with one of the following words.
 Gas, Liquid, Aqueous (12 pts, 3 pts each)

(aq)	 (l)	 (g)	
	 ` '	 \U/	

- b. Draw the reaction arrow for a **dynamic equilibrium** in the space below. (3 pts)
 - 4. a. For the following energy diagram, label by matching the letter to the provided parenthesis. (A) Energy (B) time or progress of reaction (C) reactant (D) product (6 pts, 3 pts each)



- b. Is the reaction [(exothermic) or (endothermic)] (circle one) Explain how you know. (3 pts)
- c. Would the reaction whose energy diagram is shown feel [(hot) or (cold)] (circle one) if you could hold the reaction in your hand? (3 pts)
- d. **In the energy diagram above**, draw your own energy diagram (hill) for the same reaction with a catalyst. (5 pts)

Part III: Long Answers (30 pts) Show work on all questions for partial and full credit even on questions which do not specify. Remember "attempt" points.

Given the following reactant, write down the expected reaction product.
 <u>Reaction does not need to be balanced.</u> (18 pts, 3 pts each blank)

a. $C_{10}H_{22} + O_2 \rightarrow$ _____(g) + _____(l)

The reaction that you show is [(acid base reaction) or (combustion reaction)] (circle one)

b. HF+ KOH \rightarrow ____(aq) + ____(l)

The reaction that you show is [(acid base reaction) or (combustion reaction)] (circle one)

1. a. Balance the following reaction by filling in numbers into the blanks. (6 pts, 3 pts each)

 $2 \text{ Mn} + \underline{\hspace{1cm}} O_2 \rightarrow \underline{\hspace{1cm}} \text{Mn } O_2$

b. After you balance the reaction show how many of each different element atom is in both the reactant and product side. (6 pts)

reactant

Name	(print) N	ame		(sign)
Please show work for partial credit on t have no partial credit. Please write a grade it. (1 pts print AND sign exam)	nytning you warn gran	red regiony.	,	
Part I MULTIPLE CHOICE. Choose	the constitution of	at host completes the state	\times – $\setminus \mathcal{W}$ \wedge ment or answers the q	uestion. (No
Part I MULTIPLE CHOICE. Cnoose Partial Credit for MC) (3 pts per quest	ion, 24 pts pts total)	at best completes in a		
1) What is the preferred name				1)
A) Manganese nitrate C) Dimagnesium trinitride		B) Magnesium nitride D) Magnesium trinitride		
2) .Which type of reaction is	s 4A1 + 3O2→2Al29	O ₂ ?		2)
A) Combination C) Decomposition	2 2 2 2	B) Double-replacemen D) Single-replacement		
3) An acid added to a base	will produce a			3)
A) salt and hydrogen ions C) salt and hydroxide ion		B) stronger acid and bD) salt and water.	ase.	
4) Which group is the neare A) Alkali metals	est neighbor to the n	B) Alkaline earth meta	c table? Is	4)
C) Noble gases		D) Halogens		
5) Which of the following i	s a strong acid?			5)
A) carbonic acid (H_2 COB) hydrocholoric acid (H_2 COB) salicylic acid (H_2 COB) acetic acid (H_2 COB)	I Cl, main ingredient o gredient of aspirin)	f stomache acid)		
A balanced chemical eq A) number of atoms of e C) number of molecules		same B) mass of each com D) number of moles	on each side. pound	6)
7) A solution with a pH of A) strongly acidic	1 is B) weakly basic	C) weakly acidic	D) strongly basic	7)
8) The substances that are	formed by a chemic	al reaction are called the		8)
•	B) reactants	C) precipitates.	D) products.	

1. Name the following 2 different molecules. Please note the element name given in parenthesis. The two molecules have one common element so only 3 element names are given. (useful information: mono, di, tri, tetra, penta) (12 pts, 3 pts each)

N Cl₃ (nitrogen, chlorine, calcium)

compound is [(ionic) or (covalent)] (circle one)

Name of compounds _____

Ca Cl₂

compound is [(ionic) or (covalent)] (circle one)

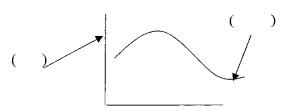
name of compound

- 2. Show the element symbol for any one <u>alkali metal</u> (6 pts)
- a. Match the following by filling in the blank with one of the following words. Gas, Liquid, Aqueous (12 pts, 3 pts each)

(l) _____

(aq) _____ (g) ____

- b. Draw the reaction arrow for a **dynamic equilibrium** in the space below. (3 pts)
 - 4. a. For the following energy diagram, label by matching the letter to the provided parenthesis. (A) Energy (B) time or progress of reaction (C) reactant (D) product (6 pts, 3 pts each)



- b. Is the reaction [(exothermic) or (endothermic)] (circle one) Explain how you know. (3 pts)
- c. Would the reaction whose energy diagram is shown feel [(hot) or (cold)] (circle one) if you could hold the reaction in your hand? (3 pts)
- d. **In the energy diagram above**, draw your own energy diagram (hill) for the same reaction with a catalyst. (5 pts)

Part III: Long Answers (30 pts) Show work on all questions for partial and full credit even on questions which do not specify. Remember "attempt" points.					
 Given the following reactant, write down the expected reaction product. Reaction does not need to be balanced. (6 pts, 3 pts each blank) 					
a. H Cl + Na OH \rightarrow (aq) +(l)					
The reaction that you show is [(acid base reaction) or (combustion reaction)] (circle one)					
b. $C_3H_8 + O_2 \rightarrow$ (g) +(l)					
The reaction that you show is [(acid base reaction) or (combustion reaction)] (circle one)					
2 a. Balance the following reaction by filling in numbers into the blanks. (6 pts, 3 pts each)					
$Ti + \underline{\hspace{1cm}} Cl_2 \Rightarrow \underline{\hspace{1cm}} Ti Cl_4$					
b. After you balance the reaction show how many of each different element atom is in both the reactant and product side. (6 pts)					

reactant

Exam II Physical Science (PSC 102) For	rm A 10/3/18W 11 am		xam #	
Name	(print) Nan	ne		_(sign)
Please show work for partial credit on the have no partial credit. Please write an grade it. (1 pts print AND sign exam)	he Long Answers and in nything you want graded	some of the Short Answe legibly. If I cannot rea	r Questions. Multip nd your work, I obv	
Part I MULTIPLE CHOICE. Choose Partial Credit for MC) (3 pts per quest	the one alternative that ion, 24 pts pts total)	best completes the stater	nent or answers me	1)
1) An acid added to a base w	vill produce a			1)
A) salt and hydrogen ions C) salt and water.		B) salt and hydroxide io D) stronger acid and ba	ns. se.	
2) Which of the following is	s a strong acid?			2)
A) salicylic acid (main ing B) acetic acid (H C ₂ H ₃ O ₂ C) hydrocholoric acid (H D) carbonic acid (H ₂ CO ₃	₂ , main ingredient of vin CL main ingredient of st	omache acid)		
3) A solution with a pH of (A) strongly basic	l is B) weakly acidic	C) strongly acidic	D) weakly basic	3)
4) A balanced chemical equ A) mass of each compou C) number of molecules	nation will have the sai	me0 B) number of atoms of D) number of moles	n each side. each element	4)
5) The substances that are t	formed by a chemical	reaction are called the		5)
A) chemicals.	B) precipitates.	C) reactants	D) products.	
6) .Which type of reactionA) Single-replacementC) Combination	is $4A1 + 3O_2 \rightarrow 2Al_2C$	B) Decomposition D) Double-replacemen	nt	6)
7) Which group is the near A) Noble gases C) Halogens	est neighbor to the no	ble gases in the periodi B) Alkaline earth meta D) Alkali metals	ic table? als	7)
8) What is the preferred na	ame for Mg ₃ N ₂ ?			8)
A) Manganese nitrate C) Magnesium nitride		B) Dimagnesium trinit D) Magnesium trinitrio		

1. Name the following 2 different molecules. Please note the element name given in parenthesis. The two molecules have one common element so only 3 element names are given. (useful information: mono, di, tri, tetra, penta) (12 pts, 3 pts each)

Li₃ P (lithium, phosphorus, iodine) compound is [(ionic) or (covalent)] (circle one)

name of compound

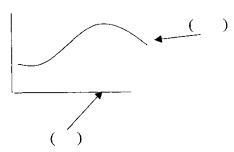
P I₃ compound is [(ionic) or (covalent)] (circle one)

name of compound

- 2. Show the element symbol for any one alkaline earth metal _____(6 pts)
- a. Match the following by filling in the blank with one of the following words. Gas, Liquid, Aqueous (12 pts, 3 pts each)

(g)	 (aq)	 (l)
(Q)		

- b. Draw the reaction arrow for a **dynamic equilibrium** in the space below. (3 pts)
 - 4. a. For the following energy diagram, label by matching the letter to the provided parenthesis. (A)Energy (B) time or progress of reaction (C) reactant (D) product (6 pts, 3 pts each)



- b. Is the reaction [(exothermic) or (endothermic)] (circle one) Explain how you know. (3 pts)
- c. Would the reaction whose energy diagram is shown feel [(hot) or (cold)] (circle one) if you could hold the reaction in your hand ? (3 pts)
- d. **In the energy diagram above**, draw your own energy diagram (hill) for the same reaction with a catalyst. (5 pts)

Part III: Long Answers (30 pts) Show work on all questions for partial and full credit even on questions which do not specify. Remember "attempt" points.

1.	Given the following reactant, write down the expected reaction product. be balanced. (6 pts, 3 pts each blank)	Reaction does not need to
----	---	---------------------------

a. H Br + Li OH
$$\rightarrow$$
 _____(aq) + _____(l)

The reaction that you show is [(acid base reaction) or (combustion reaction)] (circle one)

b.
$$C_8H_{18} + O_2 \rightarrow (g) + (1)$$

The reaction that you show is [(acid base reaction) or (combustion reaction)] (circle one)

1. a. Balance the following reaction by filling in numbers into the blanks. (6 pts, 3 pts each)

$$2 \text{ Al} + \underline{\hspace{1cm}} \text{Cl}_2 \rightarrow \underline{\hspace{1cm}} \text{Al Cl}_3$$

b. After you balance the reaction show how many of each different element atom is in both the reactant and product side. (6 pts)

reactant

Exam II Physical Science (PSC 102) Form B 10/3/18W 11 am M		n#	
Name(print) Name			(sign)
Please show work for partial credit on the Long Answers and in so have no partial credit. Please write anything you want graded I grade it. (1 pts print AND sign exam)	ome of the Short Answer C egibly. If I cannot read	Questions. Multipl your work, I obvio EXAN CE	Lo
Part I MULTIPLE CHOICE. Choose the one alternative that be Partial Credit for MC) (3 pts per question, 24 pts pts total)	est com pletes the stateme	nt or answers the q	uestion. (140
1) What is the preferred name for Mg ₃ N ₂ ?			1)
	B) Manganese nitrate D) Magnesium nitride		
	e on e B) mass of each compour D) number of moles	each side. nd	2)
3) .Which type of reaction is $4A1 + 3O_2 \rightarrow 2Al_2O_3$?			3)
A) Combination C) Double-replacement	B) Single-replacement D) Decomposition		
4) The substances that are formed by a chemical re-	action are called the		4)
A) precipitates. B) reactants	C) chemicals.	D) products.	
5) Which of the following is a strong acid?			5)
A) hydrocholoric acid (H Cl, main ingredient of sto B) carbonic acid (H $_2$ CO $_3$, main ingredient of coca C) acetic acid (H C $_2$ H $_3$ O $_2$, main ingredient of vine D) salicylic acid (main ingredient of aspirin)	i cola)		
6) A solution with a pH of 1 isA) strongly basic B) strongly acidic	C) weakly basic	D) weakly acidic	6)
7) Which group is the nearest neighbor to the noblA) Noble gasesC) Halogens	e gases in the periodic to B) Alkaline earth metals D) Alkali metals	able?	7)
8) An acid added to a base will produce a			8)
A) salt and water. C) stronger acid and base.	B) salt and hydroxide ion D) salt and hydrogen ion		

1. Name the following 2 different molecules. Please note the element name given in parenthesis. The two molecules have one common element so only 3 element names are given. (useful information: mono, di, tri, tetra, penta) (12 pts, 3 pts each)

P₂ O₅ (phosphorus, oxygen, potassium) compound is [(ionic) or (covalent)] (circle one)

name of compound

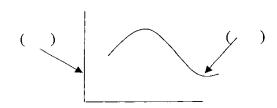
K₃ P compound is [(ionic) or (covalent)] (circle one)

2. Show the element symbol for any one **noble gas** (6 pts)

a. Match the following by filling in the blank with one of the following words. Gas, Liquid, Aqueous (12 pts, 3 pts each)

(g) _____ (l) ____ (aq) ____

- b. Draw the reaction arrow for a **dynamic equilibrium** in the space below. (3 pts)
 - 4. a. For the following energy diagram, label by matching the letter to the provided parenthesis. (A) Energy (B) time or progress of reaction (C) reactant (D) product (6 pts, 3 pts each)



- b. Is the reaction [(exothermic) or (endothermic)] (circle one) Explain how you know. (3 pts)
- c. Would the reaction whose energy diagram is shown feel [(hot) or (cold)] (circle one) if you could hold the reaction in your hand ? (3 pts)
- d. **In the energy diagram above**, draw your own energy diagram (hill) for the same reaction with a catalyst. (5 pts)

Dr. Hahn Physical Science Lecture Exam II Fall 2018 11am Form B

Part III: Long Answers (30 pts) Show work on all questions for partial and full credit even on questions which do not specify. Remember "attempt" points.

Given the following reactant, write down the expected reaction product. <u>Reaction does not need to be balanced.</u> (6 pts, 3 pts each blank)

a. $C_4H_{10} + O_2 \rightarrow$ ______(g) + ______(l)

The reaction that you show is [(acid base reaction) or (combustion reaction)] (circle one)

b. HI + KOH \rightarrow _____(aq) + _____(l)

The reaction that you show is [(acid base reaction) or (combustion reaction)] (circle one)

2. a. Balance the following reaction by filling in numbers into the blanks. (6 pts, 3 pts each)

 $\underline{\hspace{1cm}}$ Sr + $\underline{\hspace{1cm}}$ O₂ \rightarrow 2 Sr O

b. After you balance the reaction show how many of each different element atom is in both the reactant and product side. (6 pts)

reactant