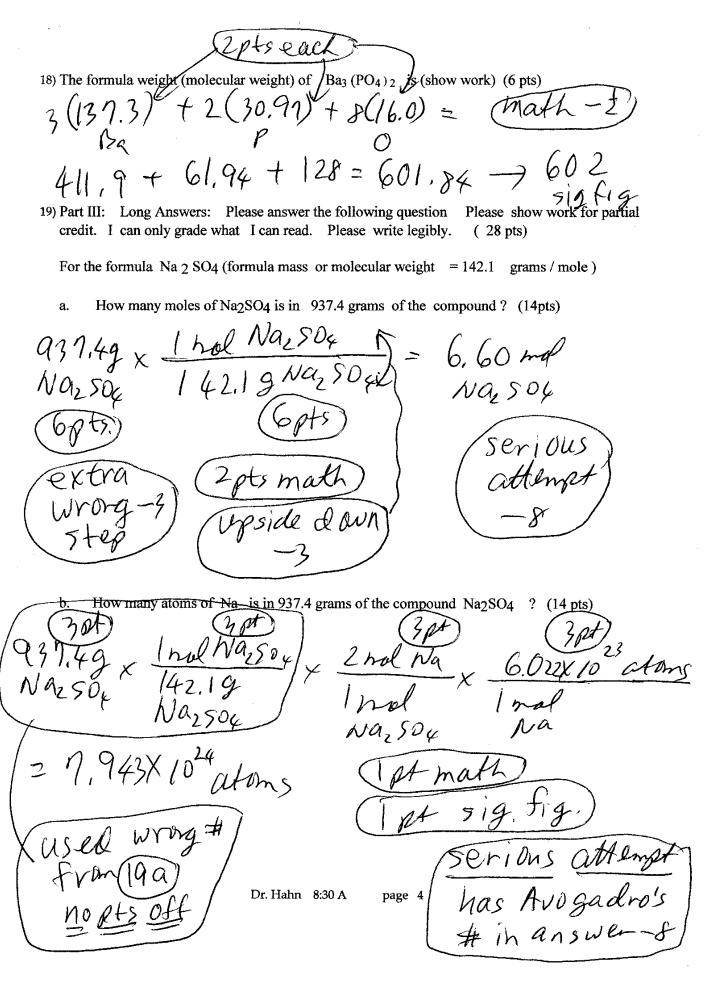
Exam I General Chemistry I (CHEM 101) Fall 2012 8:30 am T,R Dr. Hahn 8:30 A Exam #
Name (print) Name (NO partial Credit (sign)
Please show work for partial credit on the Long Answers and in some of the Short Answer Questions. Multiple choice
questions have no partial credit. Please write anything you want graded legibly. If I cannot read your work, I obviously cannot grade it. (2 pts print and sign exam)
WH - not attempted
Part I MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. (2 pts per question, 28 pts total)
1) Determine the volume of an object that has a mass of 455.6 g and a density of 19.3 g/cm ³ .
A) 42 .4 mL B) 23.6 mL C) 31.2 mL D) 87.9 mL E) 18.5 mL
2) The statement, "In a chemical reaction, matter is neither created nor destroyed" is called
A) Dalton's Atomic Theory. B) the Scientific Method.
C) the Law of Definite Proportions.
Description of Conservation of Mass. $455.69 \times \frac{ch}{1930} = 23.6 \text{ m}$
3) Which of the following are examples of a chemical change?
A) copper building materials develop a green patina over time B) a match burns
C) ethanol evaporates
D)Both A and B are examples of chemical change. E) All of the above are examples of chemical change.
4) Write the name for Sn(SO ₄) ₂ . Remember that Sn forms several different charged ions. 4) 4)
A) tin (II) sulfite $(2 \times -2) = 4$
B) tin (I) sulfite C) tin sulfide
D) tin (I) sulfate (S) (I) (IV) sulfate
n
5) Identify the charges of the protons, neutrons, and electrons. A) protons +1, neutrons 0, electrons -1
B) protons 0, neutrons -1, electrons +1 C) protons +1, neutrons -1, electrons 0
D) protons 0, neutrons +1, electrons -1 E) protons -1, neutrons 0, electrons +1
frest rule on off a side
6) Which of the following is a molecular (covalent) compound? A) RbBr B) GH3Cl C) KCl D) CuCl ₂ E) NaNO ₃
D Cabi
7) The outside temperature is 35°C, what is the temperature in K? A) 95 K B) -238 K C) 63 K D) 308 K E) 31 K
K = 25°C +202 15 200 1
K= 35°C+273.15 = 308.15 -> 308
Dr. Hahn 8:30 A page 1 W SIG Fig.

8) How many molecules of N2O4 are in 76.3 g N2O4? The molar mass of N2O4 is 92.02 g/mol.	8)
A) $7.26 \times 10^{23} \text{N}_2\text{O}_4$ molecules $76.39 \times 10^{23} \text{N}_2\text{O}_4$ molecules $76.39 \times 10^{23} \text{N}_2\text{O}_4$ molecules $10.39 \times 10^{25} \text{N}_2\text{O}_4$ molecules $10.39 \times 10^{25} \text{N}_2\text{O}_4$ molecules $10.39 \times 10^{24} \text{N}_2\text{O}_4$ molecules $10.39 \times 10^{25} N$	-
9) Read the length of the metal bar with the correct number of significant figures.	9)
A) 20 cm (B) 15.0 cm (C) 15.000 cm (D) 15 cm (E) 15.00 cm	inificant #
10) Choose the pure substance from the list below. A) lemonade B) sea water C) milk D) si gar E) air	10)
11) How many silver atoms are contained in 3.75 moles of silver? A) 6.23×10^{24} silver atoms B) 2.26×10^{24} silver atoms C) 6.50×10^{25} silver atoms D) 2.44×10^{26} silver atoms E) 1.61×10^{23} silver atoms	11) <u>B</u> 2,2975 x10 ²⁹ =
12) Which of the following elements is a noble gas? (A) Ar B) N C) Br D) O E) K	12)
13) Determine the name for H ₂ CO ₃ . A) tarbonic acid B) dihydrogen carbonate C) hydrocarbide acid D) carbonous acid E) hydrocarbonic acid Caude Cau	13)
14) How many mg does a 433 kg sample contain? A) 4.33 × 10 ⁷ mg	14) 6
(B) $4.33 \times 10^8 \text{ mg}$ (C) $4.33 \times 10^6 \text{ mg}$ (D) $4.33 \times 10^{-4} \text{ mg}$ (E) $4.33 \times 10^{-3} \text{ mg}$ (E) $4.33 \times 10^{-3} \text{ mg}$ (B) $4.33 \times 10^{-3} \text{ mg}$ (C) $4.33 \times 10^{-3} \text{ mg}$	x10 hy

Part II Shor question. (4	t Answer: Write the word or phrase or circle the choice that best completes each statement or answer the 2 pts)
15)	The standard formula and the meeting much so fill in the blook with the number which metabox (6 pts)
	For the following, given the metric prefix, fill in the blank with the number which matches (6 pts)
	kilo 1000 centi 0.01 milli 0.001
16)	For the symbol given below fill in the blanks (6 pts)
	Fill in the blank or circle the correct choice (2 pts per blank, 24 pts) # neutrons $\frac{20 - 00}{10} = 10$
17)	Fill in the blank or circle the correct choice (2 pts per blank, 24 pts)
	a. The element symbol for the element hydrogen
	b. The name of the element with the symbol Li Lithium
	c. one mole of the element Mg weighs 24.7 grams and contains 6.02 × 10 atoms of magnesium
	602×10^{27} atoms of magnesium
	d. An example of a (period) or (group) [circle one] is the column going from H to Fr
	e. An example of one of the elements which is an Actinide/Lanthanide
	is the element Md (fill in with the symbol for an element) Veversed -2)
	f. For the element S the atomic mass is 32.1 and the atomic number is 16
	g. The charge for the ionic form of the element Na is
	This number is the same as the (group) or (period) [circle one] number}
	h. The charge for the ionic form of the element Se is
	This number is derived from the equation {(group) or (period) number minus 8}

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Exam I	General Chemistry I	(CHEM 101) Fall 2012	2 8:30 am T,R D	r. Hahn 8:30 B	Exam #	
Vame	Kly		_(print) Name	no parti	al Credit	sign)
vanic	0		- (122.11)	Multiple	choice	
	how work for partial c	redit on the Long An	swers and in some		Questions. Multip	
	ns have no partial cred		thing you want g	raded legibly. If I ca	nnot read your worl	k, I obviously
annot g	grade it. (2 pts print a	nd sign exam	1 - not	- atterna	ted)	•
Part I	MULTIPLE CHOICE.	Choose the one alte	mative that best	completes the statem	ent or answers the	question. (2
	question, 28 pts total)	b - / //	leen mo.	tal + hon h	retal	•
-	vest	are verw	violent) compound	12		1) A
	1) Which of the follow A P_4O_{10}	B) SrI ₂	C) LiOH	D) NaCN	E) ZnS	-/ -
	UN 14010	2) 3.12	· ·		,	_
	2) Determine the volu	me of an object that h	as a mass of 455 6	g and a density of 19	3 o/cna3	2)
	A) 42 .4 mL	B) 87.9 mL	C) 31.2 mL	D) 18.5 mL	E) 23.6 mL	
	, ,					~
	3) Identify the charges	of the protons, neutr	ons, and electrons	Cal		3)
		trons +1, electrons -1		(LP1) es	(L)	
		utrons 0, electrons -1		1000		
		utrons -1, electrons 0 trons -1, electrons +1		MC		
		utrons 0, electrons +1		· · · · · · · · · · · · · · · · · · ·		
	,					И
	4) How many mg does	s a 433 kg sample con	itain?			4)
	(A) $4.33 \times 10^8 \text{ mg}$	1.001	10004	1000m	2 = 2.	•
	B) 4.33×10^{-3} mg	3457Kg X		X	9 = 4.33	X Ing ha
	C) 4.33×10^{-4} mg	433 kg x	1 Kg	19		10.0
	D) 4.33×10^7 mg					
	E) 4.33×10^6 mg					
				-		_ (
	5) Read the length of t	he metal bar with the	correct number o	f significant figures.	14.00	5)
			40	f significant figures. N read b of the #' Which	eruke_	,
				of Me	marks	-1,
	The second secon	. 10	20 / <u></u>	We did	gan est	mater
				# Which	900	1770
	A) 20 cm	B) 15.000 cm	C) 15 cm	D) 15.00 cm	E))15.0 cm	
		•	Cana	ma-1/11 A)		n
	6) Which of the follow	ing <u>el</u> ements is a nob	le gas? (GV	g .viii)		6)
	A) N	(B)Ar	C) K	D) Br	E) O	
	<u>.</u>		o.m. 1 (:1			\sim
	7) How many silver at			er? A 23	•	//
	A) 6.50 × 10 ²⁵ silv	ver atoms	5 halis	602 X10	2 2 4	24
	B) 1.61×10^{23} silver (C) 2.26 × 10^{24} silver	ver atoms 7, /	5 mal x.	1	= 1,26 K	10 ha
	D) 2.44×10^{26} silv	ver atoms	ing	I mad Hg	I'	,
	E) 6.23×10^{24} silv		· .		ato	2

	8) Determine the name for H_2CO_3 .	8)
	A) hydrocarbide acid	
	(B) carbonic acid	
	e) hydrocarbonic acid	^
	D) carbonous acid	
	E) dihydrogen carbonate	
	9) Write the name for Sn(SO ₄) ₂ . Remember that Sn forms several different charged ions.	9)
	A) tin (II) sulfite	
	B) tin (I) sulfate	
	C) tin sulfide	
	D) tin (I) sulfite	
	(E) tin (IV) sulfate	
	2))(17)0	.
	10) How many molecules of N2O4 are in 76.3 g N2O4? The molar mass of N2O4 is 92.02 g/mol.	10)
	$_{i}$. $_{i}$ $_{i}$ $_{i}$ $_{i}$	
	A) $5.54 \times 10^{25} \mathrm{N}_2\mathrm{O}_4$ molecules 0.73	23
	B) $4.59 \times 10^{25} \mathrm{N}_2\mathrm{O}_4$ molecules $16.39 \mathrm{g}_{\mathrm{A}} $	-=499x
	C) $1.38 \times 10^{24} \text{N}_2\text{O}_4$ molecules $N_2 \text{O}_4 \text{O}_4 \text{O}_2$ 1m/s	7, 11/
	(D) 4.99×10^{23} N ₂ O ₄ molecules	1025
		(
	E) $7.26 \times 10^{23} \text{ N}_2\text{O}_4$ molecules	h
	(N2102	$\Delta = \Delta$
	11) Choose the pure substance from the list below.	11)
	A) sugar B) lemonade C) milk D) air E) sea wate	440
		++ 120 A
والمستدادية	12) The outside temperature is 35°C, what is the temperature in K?	12)
	(A) 308 K B) 31 K C) 63 K D) 95 K E) -238 K	^
	12) Which of the following are examples of a charminal change? $k = 35 + 213.15 =$	305
	13) Which of the following are examples of a Chemical Change:	<u> </u>
	A) a match burns	
	B) copper building materials develop a green patina over time	
	C) ethanol evaporates Phy Si CM	
	D) Both A and B are examples of chemical change.	
	E) All of the above are examples of chemical change.	_
		10
	14) The statement, "In a chemical reaction, matter is neither created nor destroyed" is called	14)
	A) the Law of Definite Proportions.	
	B) the Scientific Method.	
	C) the Law of Multiple Proportions.	
	D) Dalton's Atomic Theory.	
	(E) the Law of Conservation of Mass.	

art II Sho uestion. (rt Answer: Write the word or phrase or circle the choice that best completes each statement or answer the 42 pts)
15)	For the following, given the metric prefix, fill in the blank with the number which matches (6 pts)
	milli $O(00)$ centi $O(01)$ kilo 100
16)	10-3 10- 10 veversed-
	For the symbol given below fill in the blanks (6 pts)
	75 As # protons 33 # electrons (for a neutral atom) 33 # neutrons 75 -3
	33 protons
17)	
	Fill in the blank or circle the correct choice (2 pts per blank, 24 pts)
	a. The element symbol for the element sulfur,
	b. The name of the element with the symbol Na <u>50 di Um</u>
	c. one mole of the element Sr weighs 87.6 grams and contains
	CON XID atoms of strontium
	d. An example of a (period) or (group) [circle one] is the row going from K to Kr
	e. An example of one of the elements which is a Nonmetal is the element (fill in with the symbol for an element)
	f. For the element N the atomic mass is 14.6 and the atomic number is
	g. The charge for the ionic form of the element Mg is $+2$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$
	This number is the same as the { (group) or (period) }[circle one] number

Dr. Hahn 8:30 B page 3

This number is derived from the equation (group) or (period) number minus 8}

The charge for the ionic form of the element F

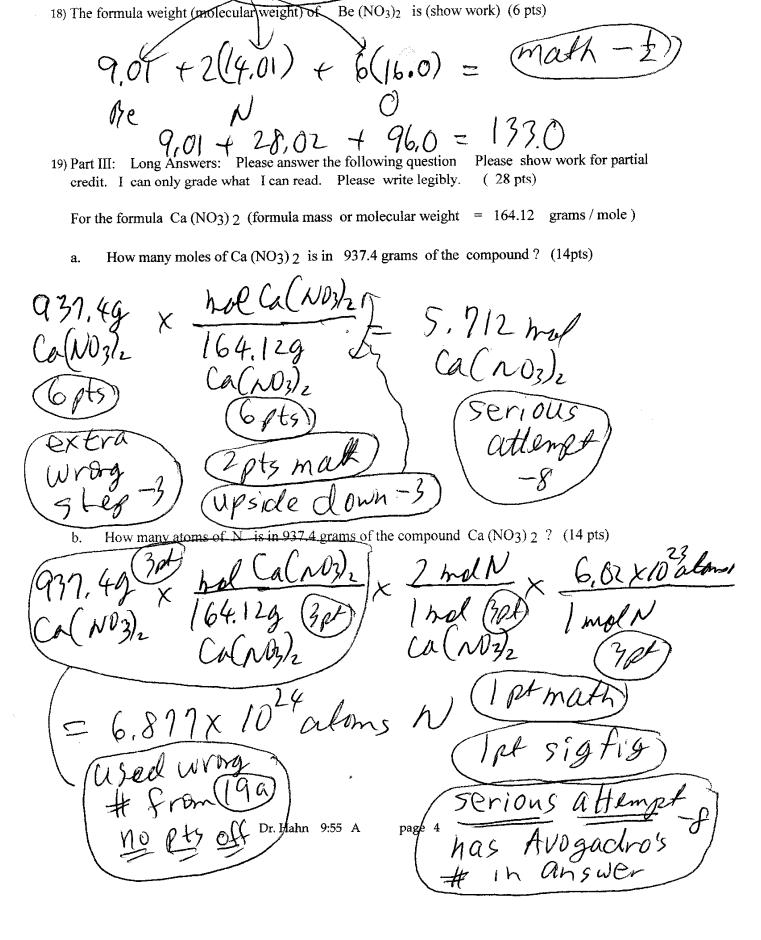
h.

of the analy
18) The formula weight (molecular weight) of (NH ₄) ₂ O is (show work) (6 pts)
(V) () () () () () () () () ()
2(14.01) + 8(1.01) + 46.0 = math -2
N H U V
28,02 + $\sqrt{6.0}$ = $\sqrt{52.1}$ 19) Part III: Long Answers: Please answer the following question Please show work for partial credit. I can only grade what I can read. Please write legibly. (28 pts)
For the formula Ba3(PO4)2 (formula mass or molecular weight = 601.9 grams / mole)
a. How many moles of Ba ₃ (PO ₄) ₂ is in 937.4 grams of the compound? (14pts)
937,49 × mol Baz (PO4)2 × 1,557; Baz (PO4)2 × 601,99 9 mol
Baz(804)2 601,99 9 mol
Baz (P04)2 Baz (P04)2
(0/6)
(extra wrong) (2045 math) (serious)
Step-3 (apside down) attempt
The contract of the contract o
b. How many atoms of Ba is in 937.4 grams of the compound Ba3(PO4)2? (14 pts)
937.49 x hal 1797 (804) x 2 had 130 x
(Bay(00)2 601,99 (300) 1 mil
max (804)2 max (804)2
(602 ×10 alons Ba = 2 812 × 124 1.
I holsa Dilling
199 (19than) 179
(used wrong) Ipt sig tig serious
the from (19ay) Dr. Hahn 8:30 B page 4 (attlingt -f)

Exam I General Chemistry I (CHEM 101) Fall 2012 9:55 am T,R Dr. Hahn 9:55 A Exam #	Ti.A
Name Koy (print) Name No partial crea	_(sign)
Please show work for partial credit on the Long Answers and in some of the Short Answer Questions. Multip questions have no partial credit. Please write anything you want graded legibly. If I cannot read your work	ole choice C. I obviously
cannot grade it. (2 pts print and sign exam) $1/A = 100 + attempted$	
Part I MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the	question. (2
1) Read the length of the metal bar with the correct number of significant figures.	1)
1) Read the length of the metal bar with the correct matthe of significant figures. 1 eqti voted # 15 (ast	
. Significant #	
A) 15 cm B) 15.000 cm C) 5.0 cm D) 15.00 cm E) 20 cm	-
2) Which of the following is an ionic compound? all the rest between A) NO2 B) SeBr2 C) CF4 D) PCl3 B) LiCl	2)
elements close together in periodic tuble	3)
A) Zn B) Xe C) Li O) F E) Ca	3)
4) How many moles of N ₂ O ₄ are in 76.3 g N ₂ O ₄ ? The molar mass of N ₂ O ₄ is 92.02 g/mol.	4)
A) 1.21 moles (B) 0.829 moles (C) 1.42 x 10^{-4} moles (D) 1.00 mole (E) 0.829 moles (D) 1.00 mole	hard
C) 1.42 x 10 ⁻⁴ moles D) 1.00 mole	1-0(
E) 7.02×10^3 moles $W_Z O_C$	
5) In a chemical reaction, matter is neither created or destroyed. Which law does this refer to?A) Law of Modern Atomic Theory	5)
B) First Law of Thermodynamics	
C) Law of Definite Proportions D) Law of Multiple Proportions	
E) Law of the Conservation of Mass	^
6) How many mg does a 433 kg sample contain?	6)
A) 4.33×10^{-4} mg B) 4.33×10^{-3} mg	
C) 4.33 × 107 mg 433 tu x 10009 v 1000 hg	1, 22 V/08
B) 4.33×10^{-3} mg C) 4.33×10^{7} mg D) 4.33×10^{6} mg E) 4.33×10^{8} mg E) 4.33×10^{8} mg L) 4.33×10^{8} mg	4. 77×10°
	mg

	0
7) Identify a cation. A) An atom that has gained a proton. B) An atom that has lost a proton. C) An atom that has lost an electron. D) An atom that has gained an electron.	7)
	8) C
A) mass B) volume C) density D) None of the above are examples of intensive properties. E) All of the above are examples of intensive properties.	Low
9) Write the name for Ca ₃ (PO ₄) ₂ . Remember that Ca only forms one charged ion. A) calcium phosphate B) calcium (III) phosphite C) tricalcium phosphorustetraoxide D) calcium phosphite E) calcium (II) phosphite	9) 4
10) How many iron atoms are contained in 354 g of iron?	10)
10) How many iron atoms are contained in 354 g of iron? A) 2.62 × 10 ²⁵ Fe atoms B) 4.69 × 10 ²⁴ Fe atoms C) 3.82 × 10 ²⁴ Fe atoms D) 9.50 × 10 ²² Fe atoms E) 2.13 × 10 ²⁶ Fe atoms E) 2.13 × 10 ²⁶ Fe atoms The second of the sec	lons Fe
E) 2.13×10^{26} Fe atoms	
11) Determine the mass of an object that has a volume of 88.6 mL and a density of 9.77 g/mL. A) 568 g B) 1100 g C) 298 g D) 907 g E) 866 g	11)
12) Give the name for H ₂ SO ₄ . A) persulfuric acid B) Sulfuric acid C) hyposulfurous acid D) sulfurous acid	12)
E) persulfurous acid 13) The outside temperature is 35°C, what is the temperature in K? (A) 308 K (B) 95 K (C) -238 K (D) 63 K (E) 31 K	13)
	E
14) Choose the element from the list below. A) rust - ivon 0 vidl B) carbon dioxide C) water - Hz 0 D) sodium chloride NaCl	14)
(E) Helium He (D. of the plane to wan Memori Ze	of the symb

15)	For th	e following, given the metric prefix, fill in the blank with the number which matches (6 pts)
16)		e symbol given below fill in the blanks (6 pts) lo^{-3} lo^{-3} lo^{-3} lo^{-3} lo^{-3} lo^{-3} lo^{-3}
	127 52	Te # protons 52 # electrons (for a neutral atom) 52 # neutrons 127-52
1 <i>7</i>)	Fill in	the blank or circle the correct choice (2 pts per blank, 24 pts)
		The element symbol for the element phosphorus \mathcal{L}
	a.	
	b.	The name of the element with the symbol Br bromine
	c.	one mole of the element Rb weighs 85.47 grams and contains
		6.02×10^{23} atoms of rubidium
	d.	An example of a (period) or (group) [circle one] is the c olumn going from C to Pb
	e.	An example of one of the elements which is a Metal is the element (fill in with the symbol for an element)
	f.	For the element Cl the atomic mass is $\frac{3}{15}$ and the atomic number is $\frac{11}{15}$
	g.	The charge for the ionic form of the element Sr is $\pm \frac{1}{2}$.
		This number is the same as the (group) or (period) [circle one] number}
	h.	The charge for the ionic form of the element O (oxygen) is
		This number is derived from the equation { (group) or (period) number minus 8}



2 pts QUU

Exam I General Chemistry I (CHEM 101) Fall 2012 9:55 am T,R Dr. Hahn 9:55 B Exam #	
Name (print) Name (MUT) Partial (redit)	
Please show work for partial credit on the Long Answers and in some of the Short Answer Questions. Multiple choice questions have no partial credit. Please write anything you want graded legibly. If I cannot read your work, I obviously	
cannot grade it. (2 pts print and sign exam) $NA = not$ Attlump ted)	
Part I MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. (2	
pts per question, 28 pts total) 2 pts coul MC)	
In a chemical reaction, matter is neither created or destroyed. Which law does this refer to? A Law of the Conservation of Mass	
B) Law of Multiple Proportions C) Law of Modern Atomic Theory	
D) First Law of Thermodynamics	
E) Law of Definite Proportions	
2) Choose the element from the list below.	
A) helium ————————————————————————————————————	
B) carbon dioxide CO	
C) water (20	
D) rust Won Oxide E) sodium chloride	
E) sodium chloride Na Cl	
3) The outside temperature is 35°C, what is the temperature in K?	
A) -238 K B) 63 K C) 31 K D) 95 K B) 308 K	
(A) 1/2 man and 1/2 at a man and 1/2 at	
4) How many Li atoms are contained in 97.9 g of Li? A) 4.27×10^{22} Li atoms	
B) 5.90×10^{25} Li atoms	
C) 4.18×10^{24} Li atoms	
(D) 8.49 x 10 ²⁴ Li atoms 97,99 Li x mol Li E) 7.09 x 10 ²¹ Li atoms 97,99 Li x mol Li (C) 941 g Li X [mol Li	_
6,941 g LI (molli	
5) Which of the following elements is an alkali metal?	
A) Xe B) Zn (C) Li D) Ca E) F	
avers (A)	
6) How many mg does a 433 kg sample contain? 6) 17 6) 17	
A) 4.33×10^{-4} mg (B) 4.33×10^{8} mg	
6) 107 107	
D) 4.33 × 10 mg 433 kg × 1000g × 1000 mg	
E) $4.33 \times 10^6 \text{ mg}$ = $4.33 \times 10^8 \text{ has}$	
1 (4 1)	_

7) Give the name for H26Q-1 A) sulfurous acid D) persulfurous acid D) physosulfurous acid E) sulfurir acid E) An atom that has lost a proton. D) An atom that has gained an electron. P) Read the length of the metal bar with the correct number of significant figures. 9) Read the length of the metal bar with the correct number of significant figures. 9) Protocology (A) J15-00-00 E) J2 C C C C C C C C C C C C C C C C C C			
B) persulfurous acid C) persulfuric acid D) hyposulfurous acid E) clusturic acid B) Identify a cation A) An atom that has lost a proton. C) An atom that has gained a proton. D) An atom that has gained an electron. P) Read the length of the metal bar with the correct number of significant figures. 9) Read the length of the metal bar with the correct number of significant figures. 9) A significant figures. 9) A (A) 15.0 cm B) 15.00 cm C) 15.000 cm D) 20 cm E) 15 cm (D) How many moles of N ₂ O ₄ are in 76.3 g N ₂ O ₄ ? The molar mass of N ₂ O ₄ is 92.02 g/mol. A) 7.02 x 10 ³ moles B) 1.42 x 10 ⁻⁴ moles C) 0.829 moles D) 1.21 moles B) 1.22 x 10 ⁻⁴ moles C) 0.829 moles C) 1.00 mole E) 1.00 mole E) 1.00 mole E) 1.00 mole E) 1.00 mole C) A) 4 density B) mass C) volume D) None of the following are examples of intensive properties? A) density B) mass C) volume D) None of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are of Ca ₃ (PO ₄) ₂ . Remember that Ca only forms one charged ion. A) calcium phosphite D) None of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the above are examples of intensive properties. E) All of the			7) —
C) persulfuric acid Phyposulfuric acid Phyposulfuric acid B) Identify a cation. A) An atom that has lost a proton. C) An atom that has gained a proton. D) An atom that has gained a proton. D) An atom that has gained an electron. P) Read the length of the metal bar with the correct number of significant figures. P) Read the length of the metal bar with the correct number of significant figures. P) Read the length of the metal bar with the correct number of significant figures. P) A 15.0 cm P) Room P) Room P) 15.00 cm	•		
(B) bulturic acid 8) Identify a cation. A) An atom that has lost a proton. C) An atom that has gained a proton. D) An atom that has gained an electron. D) An atom that has gained an electron. P) Read the length of the metal bar with the correct number of significant figures. 9) A (A) 15.0 cm B) 15.00 cm C) 15.000 cm D) 20 cm E) 15 cm (A) 7.02 x 10 ³ moles B) 14.2 x 10 ⁻⁴ moles C) 1.29 y C) 1.21 moles D) 1.21 moles D) 1.21 moles D) 1.21 moles D) 1.20 y C) 2.20 y C) 2.			
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Dr. Hahn 9:55 B page 2	A) calcium phosphite B) tricalcium phosphorustetraoxide C) calcium (II) phosphite D) calcium (III) phosphite E) calcium phosphate 13) Determine the mass of an object that has a A) 866 g B) 1100 g 14) Which of the following is an ionic compou	volume of 88.6 mL and a density of 9.77 g/mL. C) 568 g D) 298 g E) 907 g and? C) CH ₂ O D) PF ₅ E) SCl ₂	13) <u>A</u> 14) <u>A</u>
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	en e
Part II Short question. (42)	t Answer: Write the word or phrase or circle the choice that best completes each statement or answer the 2 pts)
15)	
·	For the following, given the metric prefix, fill in the blank with the number which matches (6 pts)
16)	centi 0.01 kilo 100 milli 0.001 10^{-3} veversed
	For the symbol given below fill in the blanks (6 pts)
	50 V # protons $\frac{23}{23}$ # electrons (for a neutral atom) $\frac{23}{23}$ # neutrons $\frac{50-23}{23}$
1 <i>7</i>)	21
	Fill in the blank or circle the correct choice (2 pts per blank, 24 pts)
	a. The element symbol for the element iodine
	b. The name of the element with the symbol Ar OVGor
	c. one mole of the element Cs weighs 132,9 grams and contains
	6.02 × 10 ²³ atoms of cesium
	d. An example of a (period) or (group) [circle one] is the row going from Cs to Rn
e e	e. An example of one of the elements which is a Transition Metal is the element M_0 (fill in with the symbol for an element)
	f. For the element Se the atomic mass is $\frac{10.96}{10.96}$ and the atomic number is $\frac{34}{10.96}$

This number is the same as the {(group) or (period) [circle one] number}

This number is derived from the equation (group) or (period) number minus 8}

The charge for the ionic form of the element $\ K$ is

The charge for the ionic form of the element Br is

g.

h.

1020 - 242
54.0 + 96.21 + 192.0 = 342.2
18) The formula weight (molecular weight) of $Al_2(SO_4)_3$ is (show work) (6 pts)
2(21,0) + 3(32,01) + 12(16,0) =
Ne 5 (2 pts ench)
19) Part III: Long Answers: Please answer the following question Please show work for partial credit. I can only grade what I can read. Please write legibly. (28 pts)
For the formula H ₂ SO ₄ (formula mass or molecular weight = 98.12 grams / mole)
a. How many moles of H ₂ SO ₄ is in 937.4 grams of the compound? (14pts)
937.49 x molhson = 9,554 mol
4506 HS06
(6pts) (5erious)
2 pts math)
step upside down -3)
b. How many atoms of H (hydrogen atoms) is in 937.4 grams of the compound H ₂ SO ₄ ?
93769 maltisoy 2 molt 6.60x10 alm
Parole 98.129 Inch tratt
He Sox House
[-1150 X/25 atoms H (1pt mouth)
(1) COD Wrong #) (1 pt sig. fig)
Serious attempt
no ets Dr. Hahn 9:55 B page 4 Mas Avagadro's
in answer

Exam I	General Chemistry I (C	CHEM 101) Fall 2012	2 8:30 am T,R Dr. H	ahn 8:30 A	Exam # <u>3-11</u>	-
Name_			_(print) Name			_(sign)
question	show work for partial cre ns have no partial credit. grade it. (2 pts print and	Please write any	swers and in some of thing you want grad	the Short Answer ed legibly. If I car	Questions. Multip mot read your wor	ole choice k, I obviously
	MULTIPLE CHOICE. (question, 28 pts total)	Choose the one alte	rnative that best com	pletes the stateme	ent or answers the	question. (2
	1) Determine the volum A) 42 .4 mL	e of an object that h B) 23.6 mL	as a mass of 455.6 g a C) 31.2 mL	nd a density of 19. D) 87.9 mL	3 g/cm ³ . E) 18.5 mL	1)
	2) The statement, "In a can A) Dalton's Atomic B) the Scientific Me C) the Law of Defin D) the Law of Cons E) the Law of Mult	Theory. ethod. nite Proportions. ervation of Mass.	atter is neither create	d nor destroyed" is	s called	2)
	B) a match burns C) ethanol evapora D) Both A and B are	materials develop a	a green patina over ti ical change.	me		3)
	4) Write the name for Sn A) tin (II) sulfite B) tin (I) sulfite C) tin sulfide D) tin (I) sulfate E) tin (IV) sulfate	(SO4)2. Remembei	that Sn forms severa	l different charged	l ions.	4)
	D) protons 0, neutro	rons 0, electrons –1 ons –1, electrons +1 rons –1, electrons 0	p			5)
	6) Which of the followin A) RbBr	g is a molecular (co B) CH ₃ Cl	valent) compound? C) KCl	D) CuCl ₂	E) NaNO3	6)
	7) The outside temperato A) 95 K	ure is 35°C, what is B) -238 K	the temperature in K'C) 63 K	? D) 308 K	E) 31 K	7)

8) How many molecu	les of N2O4 are in 70	6.3 g N ₂ O ₄ ? The mol	ar mass of N2O4 is	92.02 g/mol.	8)
A) 7.26 × 10 ²³ N ₂		.			
B) 4.99 × 10 ²³ N	-				
C) 4.59 × 10 ²⁵ N;		Þ			
D) 1.38 × 10 ²⁴ N ₂					
E) 5.54 × 10 ²⁵ N ₂					
E) 5.54 x 10-5 107	204 molecules				
9) Read the length of t	the metal bar with th	e correct number of s	ignificant figures.		9)
,,			0		-
an open comments of the control of t	10 15				
and the second s	cm				
A) 20 cm	B) 15.0 cm	C) 15.000 cm	D) 15 cm	E) 15.00 cm	
10) Choose the pure su			D)	E) -:-	10)
A) lemonade	B) sea water	C) milk	D) sugar	E) air	
l1) How many silver at	toms are contained is	n 3,75 moles of silver	?		11)
A) 6.23×10^{24} sil					
B) $2.26 \times 10^{24} \text{ sil}^{-1}$					
C) 6.50 × 10 ²⁵ sil					
D) 2.44 × 10 ²⁶ sil					
E) 1.61×10^{23} sil-					
					70)
12) Which of the follow	ring elements is a no B) N	ble gas! C) Br	D) O	E) K	12)
A) Ar	D) 1V	C) DI	<i>D</i>) 0	L) IX	
13) Determine the name	e for H ₂ CO ₃ .	Þ			13)
A) carbonic acid					
B) dihydrogen c					
C) hydrocarbide					
D) carbonous aci- E) hydrocarbonio					
E) hydrocarbolic	aciu				
14) How many mg doe	s a 433 kg sample co	ntain?			14)
A) 4.33×10^7 mg					
B) 4.33×10^8 mg					
C) 4.33×10^6 mg					
D) 4.33×10^{-4} mg					
E) 4.33×10^{-3} ms	œ.				

15)	For th	ne following, given the metric prefix, fill in the blank with the number which matches (6 pts)
		kilo centi milli
16)	For th	ne symbol given below fill in the blanks (6 pts)
	2	Ne # protons # electrons (for a neutral atom) # neutrons
17)	Fill ir	the blank or circle the correct choice (2 pts per blank, 24 pts)
	a.	The element symbol for the element hydrogen
	b.	The name of the element with the symbol Li
	c.	one mole of the element Mg weighs grams and contains
		atoms of magnesium
	d.	An example of a (period) or (group) [circle one] is the column going from H to Fr
	e.	An example of one of the elements which is an Actinide/Lanthanide
		is the element (fill in with the symbol for an element)
	f.	For the element S the atomic mass is and the atomic number is
	g.	The charge for the ionic form of the element Na is
		This number is the same as the { (group) or (period) [circle one] number}
	h.	The charge for the ionic form of the element Se is
		This number is derived from the equation {(group) or (period) number minus 8}

Dr. Hahn 8:30 A page 3

18) The formula weight (molecular weight) of $Ba_3 (PO_4)_2$ is (show work) (6 pts)

19) Part III: Long Answers: Please answer the following question Please show work for partial credit. I can only grade what I can read. Please write legibly. (28 pts)

For the formula Na 2 SO₄ (formula mass or molecular weight = 142.1 grams / mole)

a. How many moles of Na₂SO₄ is in 937.4 grams of the compound? (14pts)

b. How many atoms of Na is in 937.4 grams of the compound Na₂SO₄ ? (14 pts)

Exam I	General Chemistry I (C	HEM 101) Fall 2012	8:30 am T,R Dr. Ha	ahn 8:30 B E	ixam # _ 3 ~ 2	·.
Name_	· · · · · · · · · · · · · · · · · · ·		(print) Name			_(sign)
questio	show work for partial creens have no partial credit. grade it. (2 pts print and	Please write any			-	
	MULTIPLE CHOICE. C question, 28 pts total)	hoose the one alter	native that best com	pletes the stateme	nt or answers the	question. (2
	1) Which of the following A) P4O ₁₀	g is a molecular (cov B) SrI2	valent) compound? C) LiOH	D) NaCN	E) ZnS	1)
	2) Determine the volume A) 42 .4 mL	of an object that ha B) 87.9 mL	s a mass of 455.6 g ar C) 31.2 mL	nd a density of 19.3 D) 18.5 mL	8 g/cm ³ . E) 23.6 mL	2)
	Identify the charges of A) protons 0, neutro		ns, and electrons.			3)
	B) protons +1, neutrons -1, neu	rons 0, electrons –1 rons –1, electrons 0 rns –1, electrons +1				
	4) How many mg does a A) 4.33×10^8 mg B) 4.33×10^{-3} mg C) 4.33×10^{-4} mg D) 4.33×10^7 mg E) 4.33×10^6 mg	433 kg sample cont	ain?			4)
		metal bar with the c	correct number of sign	nificant figures.		5)
	A) 20 cm	B) 15.000 cm	C) 15 cm	D) 15.00 cm	E) 15.0 cm	
,	6) Which of the following A) N	elements is a noble B) Ar	e gas? C) K	D) Br	E) O	6)
	7) How many silver atom A) 6.50 × 10 ²⁵ silver B) 1.61 × 10 ²³ silver C) 2.26 × 10 ²⁴ silver D) 2.44 × 10 ²⁶ silver E) 6.23 × 10 ²⁴ silver	atoms atoms atoms atoms	.75 moles of silver?			7)

8)	Determine the nar	ne for H2CO3.				8)	
	A) hydrocarbid	e acid					
	B) carbonic acid	i i					
	C) hydrocarbor	nic acid					
	D) carbonous a	cid					
	E) dihydrogen	carbonate					
9)	Write the name fo	r Sn(SO ₄) ₂ . Remembe	er that Sn forms seve	eral different charg	ed ions.	9)	
,	A) tin (II) sulfite			O			
	B) tin (I) sulfate			•			
	C) tin sulfide						
	D) tin (I) sulfite						
	E) tin (IV) sulfa	te					
10)	How many molec	ules of N2O4 are in 76	.3 g N2O4? The mo	olar mass of N2O4 i	s 92.02 g/mol.	10)	
	A) 5.54 × 10 ²⁵ N		V – -		-		
	B) 4.59 × 10 ²⁵ N	I ₂ O ₄ molecules					
	C) 1.38 × 10 ²⁴ N	1 ₂ O ₄ molecules					
	D) 4.99 × 10 ²³ N	12O4 molecules					
	E) 7.26 × 10 ²³ N	I ₂ O ₄ molecules				ı	
11)	Chanse the pure s	ubstance from the list l	helow			11)	
11,	A) sugar	B) lemonade	C) milk	D) air	E) sea water	/	
	11) 54841	b) xomonade	<i>C)</i> 2.0	-/ ***			
12)		erature is 35°C, what is	the temperature in			12)	
	A) 308 K	B) 31 K	C) 63 K	D) 95 K	E) -238 K		
13)	Which of the follow	wing are examples of a	a chemical change?			13)	
	A) a match burr	ns					
	B) copper build	ing materials develop	a green patina over	time			
	C) ethanol evap						
		are examples of chem					
	E) All of the abo	ove are examples of ch	emical change.				
14)	The statement, "In	a chemical reaction, n	natter is neither crea	ted nor destroyed"	is called	14)	
	A) the Law of D	efinite Proportions.					
	B) the Scientific		•				
		Iultiple Proportions.					
	D) Dalton's Ato						
	E) the Law of C	onservation of Mass.				•	

15)	For th	ne following, given the metric prefix, fill in the blank with the number which matches (6 pts)
	roi u	ic following, given the metric prefix, fin in the blank with the number which matches (6 pts)
	1	milli centi kilo
16)		
/	For th	ne symbol given below fill in the blanks (6 pts)
	7: 3:	As # protons # electrons (for a neutral atom) # neutrons
17)		
	Fill in	the blank or circle the correct choice (2 pts per blank, 24 pts)
	a.	The element symbol for the element sulfur,
	b.	The name of the element with the symbol Na
	c.	one mole of the element Sr weighs grams and contains
		atoms of strontium
	d.	An example of a (period) or (group) [circle one] is the row going from K to Kr
	e.	An example of one of the elements which is a Nonmetal is the element (fill in with the symbol for an element)
	f.	For the element N the atomic mass is and the atomic number is
	g.	The charge for the ionic form of the element Mg is
		This number is the same as the { (group) or (period) }[circle one] number
	h.	The charge for the ionic form of the element F is
		This number is derived from the equation {(group) or (period) number minus 8}

18) The formula weight (molecular weight) of (NH₄)₂O is (show work) (6 pts)

19) Part III: Long Answers: Please answer the following question Please show work for partial credit. I can only grade what I can read. Please write legibly. (28 pts)

For the formula Ba3(PO4)2 (formula mass or molecular weight = 601.9 grams / mole)

a. How many moles of Ba₃(PO₄)₂ is in 937.4 grams of the compound? (14pts)

b. How many atoms of Ba is in 937.4 grams of the compound Ba3(PO4)2? (14 pts)

					4-	10
Exam I	General Chemistry I	(CHEM 101) Fall 201	2 9:55 am T,R Dr	. Hahn 9:55 A	Exam # 4 -	
Name_			_(print) Name			(sign)
questic	show work for partial ons have no partial cred grade it. (2 pts print a	lit. Please write an			-	1
	MULTIPLE CHOICE. question, 28 pts total)		ernative that best o	ompletes the stateme	ent or answers the	question. (2
	1) Read the length of t	the metal bar with the	e correct number of	significant figures.		1)
		10 15 Cm				
	A) 15 cm	B) 15.000 cm	C) 15.0 cm	D) 15.00 cm	E) 20 cm	
	2) Which of the follow A) NO ₂	ring is an ionic compo B) SeBr2	ound? C) CF4	D) PCl ₃	E) LiCl	2)
	3) Which of the follow A) Zn	ring elements is an al B) Xe	kali metal? C) Li	D) F	E) Ca	3)
	4) How many moles of A) 1.21 moles B) 0.829 moles C) 1.42 x 10 ⁻⁴ mo D) 1.00 mole E) 7.02 x 10 ³ mol	bles	N2O4? The molar r	nass of N ₂ O ₄ is 92.02	g/mol.	4)
	5) In a chemical reaction A) Law of Moder B) First Law of The Control Law of Definite Done of Multip E) Law of the Control	n Atomic Theory hermodynamics te Proportions	created or destroyed	1. Which law does thi	is refer to?	5)
	6) How many mg does A) 4.33 × 10 ⁻⁴ mg B) 4.33 × 10 ⁻³ mg C) 4.33 × 10 ⁶ mg D) 4.33 × 10 ⁸ mg	3	etain?			6)

7) Identify a catio	on.				7)	
	that has gained a protor	٦,	B) An atom that has los	t a proton.		
	that has lost an electron		D) An atom that has gai	ned an electron.		
8) Which of the f	ollowing are examples o	f intensive pro	perties?		8)	
A) mass						
B) volume						
C) density		<i>.</i>				
•	the above are examples	-	-			
E) All of the	e above are examples of	miensive propi	erues.			
9) Write the nam	e for Ca3(PO4)2. Remer	nber that Ca or	nly forms one charged ior	1.	9)	
A) calcium j						
	(III) phosphite	b				
	n phosphorustetraoxide					
D) calcium p						
E) Calcium ((II) phosphite					
10) How many iro	n atoms are contained ir	n 354 g of iron?			10)	
A) 2.62×10^{7}	²⁵ Fe atoms					
B) 4.69 × 10 ⁴	²⁴ Fe atoms					
C) 3.82 × 10	²⁴ Fe atoms					
D) 9.50 × 10 ²						
E) 2.13 × 10 ²						
11) Determine the	mass of an object that ha	as a volume of	88.6 mL and a density of	9.77 g/mL.	11)	
A) 568 g	B) 1100 g	C) 298 g	D) 907 g	E) 866 g	, <u> </u>	
, 0						
12) Give the name	for H ₂ SO ₄ .				12)	
A) persulfur						
B) sulfuric a						
C) hyposulf						
D) sulfurous E) persulfu						
e, persunu	ous aciu			•		
(3) The outside ter	mperature is 35°C, what	is the temperat	ture in K?		13)	
A) 308 K	B) 95 K	C) -238 K		E) 31 K		
,	ment from the list below	·.			14)	
A) rust		D				
B) carbon di	ioxide					
C) water D) sodium c	hloride					
E) helium	HUMINE					
,						

15)	For t	he following, given the metric prefix, fill in the blank with the number which matches (6 pts)
	kilo	centi milli
16)	For t	he symbol given below fill in the blanks (6 pts)
	12 5	27 Te # protons # electrons (for a neutral atom) # neutrons
17)	Din :	n the blank or simple the comment chaice. (2 mtg. mem blank 24 mtg.)
	riii ii	n the blank or circle the correct choice (2 pts per blank, 24 pts)
	a.	The element symbol for the element phosphorus
	b.	The name of the element with the symbol Br
	c.	one mole of the element Rb weighs grams and contains
		atoms of rubidium
	d.	An example of a (period) or (group) [circle one] is the c olumn going from C to Pb
	e.	An example of one of the elements which is a Metal is the element (fill in with the symbol for an element)
	f.	For the element Cl the atomic mass is and the atomic number is
	g.	The charge for the ionic form of the element Sr is
		This number is the same as the { (group) or (period) [circle one] number}
	h.	The charge for the ionic form of the element O (oxygen) is
		This number is derived from the equation {(group) or (period) number minus 8}

18) The formula weight (molecular weight) of Be (NO₃)₂ is (show work) (6 pts)

19) Part III: Long Answers: Please answer the following question Please show work for partial credit. I can only grade what I can read. Please write legibly. (28 pts)

For the formula Ca (NO₃) 2 (formula mass or molecular weight = 164.12 grams / mole)

a. How many moles of Ca (NO₃) 2 is in 937.4 grams of the compound? (14pts)

b. How many atoms of N is in 937.4 grams of the compound Ca (NO₃) 2? (14 pts)

Vame			(print) Name			(sign)
questi	show work for partial ons have no partial cre t grade it. (2 pts print	edit. Please writ				
	MULTIPLE CHOIC r question, 28 pts tota		alternative that best	completes the stater	ment or answers th	e question. (2
	A) Law of the C B) Law of Mult C) Law of Mod	Conservation of Ma iple Proportions ern Atomic Theory Thermodynamics		ed. Which law does	this refer to?	1)
	2) Choose the element A) helium B) carbon dioxi C) water D) rust E) sodium chlor	de	ow.			2)
	3) The outside temper A) -238 K	erature is 35°C, wh B) 63 K	at is the temperature i C) 31 K	n K? D) 95 K	E) 308 K	3)
	4) How many Li ator A) 4.27 × 10 ²² L B) 5.90 × 10 ²⁵ L C) 4.18 × 10 ²⁴ L D) 8.49 × 10 ²⁴ L E) 7.09 × 10 ²¹ L	i atoms i atoms i atoms i atoms	197.9 g of Li?			4)
	5) Which of the follow A) Xe	wing elements is an B) Zn	n alkali metal? C) Li	D) Ca	E) F	5)
	6) How many mg dos A) 4.33 × 10 ⁻⁴ m B) 4.33 × 10 ⁸ mg C) 4.33 × 10 ⁷ mg D) 4.33 × 10 ⁻³ m E) 4.33 × 10 ⁶ mg	ng S	contain?		•	6)

7) Give the name for I					7)
A) sulfurous acid B) persulfurous					
C) persulfuric ac				ı	
D) hyposulfurou E) sulfuric acid	is acia				
O) I I ('f t'					
8) Identify a cation. A) An atom that has lost a proton. B) An atom that has lost an electron.				an electron	8)
	has gained a proton.		atom that has gain		
9) Read the length of	the metal bar with th	e correct number of s	significant figures.		9)
6.00 (1.00 (10, 15,	20.7			
	570 544 A S. Balliston (1 to 60 to 81)	gradin dinggan). God dinggan garaga			
A) 15.0 cm	B) 15.00 cm	C) 15.000 cm	D) 20 cm	E) 15 cm	
10) How many moles of N ₂ O ₄ are in 76.3 g N ₂ O ₄ ? The molar mass of N ₂ O ₄ is 92.02 g/mol.					
A) 7.02×10^3 mo	les				
B) 1.42 x 10 ⁻⁴ m	oles				
C) 0.829 moles					
D) 1.21 moles				4	
E) 1.00 mole					
11) Which of the following are examples of intensive properties?					
A) density					
B) mass					
C) volume D) None of the al	nove are evamples of	intensive properties			
The state of the s	ve are examples of in		•		
12) Write the name for Ca ₃ (PO ₄) ₂ . Remember that Ca only forms one charged ion.					
A) calcium phosphite					
B) tricalcium pho	osphorustetraoxide				
C) calcium (II) pl					
D) calcium (III) p					
E) calcium phosp	onate				
13) Determine the mass of an object that has a volume of 88.6 mL and a density of 9.77 g/mL.					
A) 866 g	B) 1100 g	C) 568 g*	D) 298 g	E) 907 g	
14) Which of the follow	ing is an ionic comp	ound?			14)
•	B) CloO	C) CH ₀ O	D) PEc	F) SCIo	-

15)			
	For th	ne following, given the metric prefix, fill in the blank with the number which matches	(6 pts)
	centi	kilo milli	
16)		en e	
	For th	ne symbol given below fill in the blanks (6 pts)	
17)	50	V # protons # electrons (for a neutral atom) # neutrons	
,	Fill in	the blank or circle the correct choice (2 pts per blank, 24 pts)	
	a.	The element symbol for the element iodine	
	b.	The name of the element with the symbol Ar	
	c.	one mole of the element Cs weighs grams and contains	
		atoms of cesium	
	d.	An example of a (period) or (group) [circle one] is the row going from Cs to Rn	
	e.	An example of one of the elements which is a Transition Metal is the element with the symbol for an element)	_ (fill in
	f.	For the element Se the atomic mass is and the atomic number is	
	g.	The charge for the ionic form of the element K is	
		This number is the same as the { (group) or (period) [circle one] number}	
	h.	The charge for the ionic form of the element Br is	
		This number is derived from the equation {(group) or (period) number minus 8}	

- 18) The formula weight (molecular weight) of Al₂(SO₄)₃ is (show work) (6 pts)
- 19) Part III: Long Answers: Please answer the following question Please show work for partial credit. I can only grade what I can read. Please write legibly. (28 pts)

For the formula H2SO4 (formula mass or molecular weight = 98.12 grams / mole)

a. How many moles of H₂SO₄ is in 937.4 grams of the compound? (14pts)

b. How many atoms of H (hydrogen atoms) is in 937.4 grams of the compound H_2SO_4 ? 14 pts)