From I Committee				· gell	OW
Exam I General Chemis	try L-Lecture Spring	3.2014 1/28/14 Ti	uesday form 8:30 A	Dr Hahn Ex	am#
Name Key (	NA- net	(print) Name	e (NW=1	10 wark	)(sign)
Please show work for partichoice questions have no p	ial credit and full cre	ditton the Long An	overous and in an array		_, 0 ,
choice questions have no p	artial credit. Pleas	e write anything v	ou want graded legib	the Short Answer Q ly. If I cannot read	uestions. Multij
obviously cannot grade it.	(1 pts print and sign	exam) If you rui	nout of space inlease	continue on the has	i your work, I
exam and clearly tell me w	here the remaining a	nswer can be found	I. Avogadro's numb	$er = 6.022 \times 10^{23}$	ar page of the
Part I MULTIPLE CHOI- partial credit for MC. (2 pt	CE. Choose the one s per question, 24 pt	alternative that be s pts total)	st completes the stat	ement or answers th	e question. No
1) Determine the n	ımber of protons, ner	atrons and electron	is in the following	OV CAIT F	
65 29	pt = proto	: Ô	re nr nre ronowing:	0/00/00	1)
29^	y procor	11 1 = he	utron e-	= EIECEVO	72
A) $p^{+} = 29$					
B) $p^+ = 29$	$n^{\circ} = 29$ $e^{-} = 36$		19-7/ 100		
$(C)^{2}p^{+}=29$	$n^{\circ} = 29$ $e^{-} = 36$ $n^{\circ} = 36$ $e^{-} = 29$	· - (B) -	27-36=11		
D) p+ = 36	$n^{\circ} = 29$ $e^{-} = 36$	•			
E) $p^+ = 36$	$n^{\circ} = 36$ $e^{-} = 29$				
2) IT	•				
A) 5	icant figures are in th				2) _ D
11) 0	B) 2	C) 4	(D)/6	E) 3	
3) Two or more subs	stances in variable or	oportions where the	ne composition is var	!-T-1- 11 1 .	-:
A) an amorpho	us solid	oportions, where it	te contposition is var	lable throughout are	3)
B) a compound					
C) a homogene	ous mixture.				
D) a solution. (E) a heterogene	VOLTE missland				
(D) a ricial ogene	ous mixture.				
4) The statement, "In	a chemical reaction.	matter is neither or	eated nor destroyed"	i II . 1	, A
A) the Law of C	onservation of Mass.		carea nor desiroyed	is carred	4)
B) the Law of M	Iultiple Proportions.				
C) Dalton's Ato					
E) the Scientific	efinite Proportions. Method				
	Tracellou.				
5) Which of the follow	ving elements is a alk	ali metal?			_
A) N	B) Be	C) Ce	(D))K	E) Br	5)
ž <sup>1</sup> .				-,	
6) Which of the follow					6)
A) BX CV	В) Ве	C) N	D) Ce	E) K	
7) Which of the follow	ing contains the FEV	VEST atoms? V	alamata		$\bigcirc$
7) Which of the follow A) 10.0 g Na	B) 10.0 g Ar	(C))10.0 g Cs	shouldn't need to do D) 10.0 g Li		7)
Ţ	, , , , ,	G/ 20.0 g C3	D) 10.0 g L1	E) 10.0 g Kr	

	8) '	The recommen	ded adult dos	e of Elixophy	yllin®, a dr	ug used to	treat astluma, is (	5.00 mg / 1000 g of	8)
	<u> </u>	body mass. Cal	culate the do	se in milligra	ms for a 11	5–lb person	. 1 lb = 453.59 g.		
/	1	A) 24			C) 1,521		D) $3.1 \times 10^{5}$	(E) 313	
1								<u></u>	
	9) '	The factor 10 <sup>-3</sup>	corresponds	to which pre	fix?				9) /5
		A) deka	(	B) milli		C) centi		D) deci	· <del>- 9</del>
								٠.	0
	10) 1	NO <sub>2</sub> is an exam							10)
		A) a heteroge	neous mixtur	re.		B) an eler			
		C) a compou	ıįα.			D) a home	ogeneous mixtur	e.	
	11) I	dentify a cation	· 1						11) A
	/ -	(A))An atom t		n electron.					11) <u> </u>
		B) An atom t	hat has gaine	d a neutron.					
		C) An atom t	hat has lost a	proton and a	neutron.				
		D) An atom t	nat nas gaine	i an electron.					
	12) T	Which of the fol	lowing are ex	amples of ph	rreigal chan	~o?			10)
	, ·	A) salt is diss			lysicai Cilaii	ger			12)
\		B) water (soli	d) to water (li						
		C) water free							
1		D) melt solid $(\widehat{E})$ All of thes			ahanaa				
1		L) and or lines	e are example	s or physicar	change.				
									-
		プ		person			n .		
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				pers	D~	pe.	500	C1120	Phy 11h
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	•				•		-	110 110	201-63
		4						115 10 8	センノレー

statement or answers the question. Some questions may require that you show work. If you do not show work, you may lose points. Even on questions which do not require work, if you legibly show work, you may get some partial credit. (42 pts)
1 From the given list, circle all compounds. You may want to look at the periodic table if you are unfamiliar with the symbols for the elements. (5 pts, 1 pts each)
$F_2$ $SiO_2$ $K$ $H_2$ $AlCl_3$
2 Sand in water is an example of a [ ( homogenous) or (heterogenous) ] mixture (circle one). (2 pts)
metric conversions (6 pts, 2 pts per blank)
(a) one KiloLiter = $\frac{1000}{100}$ L
(b) rewrite what you wrote in (a) as 2 possible conversion factors with a numerator and denominator (put the numerator over the line and the denominator under the line)  Conversion factor #1 =     1   Conversion factor #2 =   OOO
If the number that comes out of your calculator is the following, give the final correct number taking into account the significant figure and rounding up rules. Show work. (3 pts)
(13.21+300.2)*2.6=814.866   2, 2  and 51 m 5 cientify
into account the significant figure and rounding up rules. Show work (3 pts)  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866  (13.21+300.2)*2.6=814.866
5 For the following either fill in the blank with the element symbol or the word for the element name. (I do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)
bad spelling- Ept)
$\mathcal{F}$

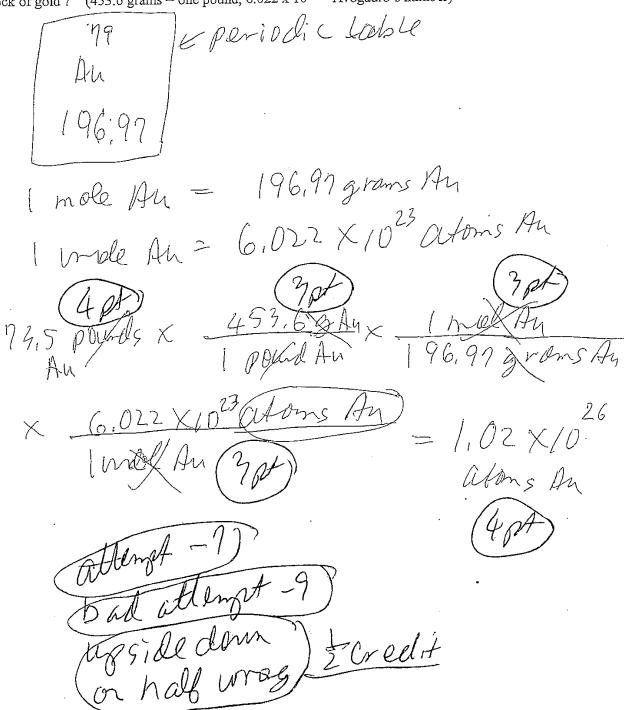
Part II Short Answer: Write the word or phrase or circle the choice that best completes each

6. Fill in the blank with <b>one</b> of the following <b>letters</b> which best fits the circled portion of the periodic table. The letters may be used once, many times or not at all: (6 pts total, 3 pts each)
(a)transition metal elements (b) chalcogen (c) main group element (d) alkali metals (e) actinide / lanthanide (f) alkaline earth metals (g) transition metal element (h) halogens
Corrawing
Periodic Table of the Elements
7. For the element <b>B</b>
Group number is (a) [ (2) or (IIIA)] (circle one)
Period number is (b) [(2) or (IIIA)] (circle one) (4 pts, 2 pts each)
8. Complete the following for the element given by consulting the periodic table: Ca has (10 pts, 1 pt each blank)
atomic mass 40,078 (give #) atomic number 20 (give #)
# protons
# neutrons (give #). (show work for last part) (1 pt show work)
(show work or explain) (1 pt
charge on the element (in its most common ionic state) is $\frac{1}{2}$ (show work or explain) (1 pt show work)  Group IIA - Charge = 3p # = 2 = +2  Cature 1 eft 91 de  The molar mass of the element is $\frac{10.0789}{1.000}$ (give number).
The molar mass of the element is $(40,0789)$ (give number).
A mole of the element above has $(0.022 \times 10^{23})$ atoms (give number).
Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (8:30T,R form A) page 4

. Convert the following using dimensional analysis. Show work for partial and full credit. If you come up with the final correct numerical answer but show no work, you will lose all points. (17 pts)

Convert 1.72 cups to grams (use density as a conversion factor, density = 1.00 grams / mL) (1.06 liter = quart, 4 cups = 1 quart)

If you have a block of gold (Au) which weighs 73.5 pounds, how many atoms of gold do you have in your (453.6 grams = one pound,  $6.022 \times 10^{23}$  = Avogadro's number) block of gold?



		NWand	work	$\rightarrow$		
Exam	I General Chemi	stry I Lecture Spring	2014 1/28/14 Tue	esday form 8:30 B	Dr. Hahn Exam	#
Name <sub>.</sub>	Ker	7	(print) Name	NA= h	ot atter,	n sign)
choice obviou	questions have no usly cannot grade it	. (1 pts print and sign where the remaining a	e write anything yo exam) If you run nswer, can be found	u want graded legibly out of space , please	y. If I cannot read y continue on the back	our work, I
		MA Parti ICE. Choose the one ots per question, 24 pt	alternative that be	it completes the state	ement or answers the	question. No
` •	B) An atom t	n. that has lost a proton a that has gained an elec that has gained a neut that has lost an electro	tron. ron.			1)
	2) Which of the fo	llowing elements is a a B) Ce	alkali metal? C) N	D) Br	E) Be	2)
	A) the Scient (B) the Law o C) the Law o D) Dalton's A	"In a chemical reactior ific Method. If Conservation of Mas If Multiple Proportions Atomic Theory. If Definite Proportions.	S.	reated nor destroyed'	'is called	3) <u>R</u>
	4) How many sign	nificant figures are in t B) 4	he measurement, 46 C) 2	3.090 m? D) 5	E) 3	4)
		ded adult dose of Elixo culate the dose in mill B) 1.5				5)
-	6) NO <sub>2</sub> is an exam A) an elemen C) a heteroge	-		a homogeneous mixt a compound.	ure.	6) <u>D</u> .
	7) Which of the fo	llowing elements is a r	nonmetal? C) Be	D) Ce	(E) N	7)
	A) a homoge	nd.	roportions, where th	ne composition is vari	iable throughout are	8)

	4						
9) Wh	ich of the foll	lowing conta	ins the FEWE			do a calculation here.	9) A
e	))10.0 g Cs	B) 10.	0 g Li	C) 10.0 g Ar	D) 10.0 g N	a E) 10.0 g Kr	
		lowing are ex d) to water (l		ysical change?			10)
		olved in wate					
		gold to liquid					
D	) water freez	es	_				
Œ	All of these	are example	s of physical	change.		,	•
	j				•		,/I
	` '	corresponds t	o which prefi	x?			11) #
A	) milli	F	3) deka	C) d	leci	D) centi	<del></del>
10\ D-1-							$\sim$
		imber of pro	ons, neutrons	and electrons i	n the following:		12)
65 29	· · · · · · · · · · · · · · · · · · ·						
A)	) p+=29	n° = 36	$e^{-} = 36$	•			
		n° = 29					
(D)	p+=29	n°=36 n°=36	$e^{-} = 29$				
E)	p+=29	n° = 29	e <sup>-</sup> = 36				

SiO <sub>2</sub> (K) (H <sub>2</sub> ) AlCl <sub>3</sub> 2 Sand in water is an example of a [ (heterogenous) or (homogenous)] mixture (circle one). (2 pts)  3 metric conversions (6 pts, 2 pts per blank)  (a) (C) CentiGram = one gram  (b) rewrite what you wrote in (a) as 2 possible conversion factors with a numerator and denominator (put the numerator over the line and the denominator under the line)  Conversion factor #1 = (O) C G Conversion lactor #2 = (G) C G Conversion	From the given list, circle elements. You may want to look at the periodic table if you are unfamiliar with the symbols for the elements. (5 pts, 1 pts each)
metric conversions (6 pts, 2 pts per blank)  (a)	$F_2$ SiO <sub>2</sub> $K$ $H_2$ AlCl <sub>3</sub>
(a) CentiGram = one gram  (b) rewrite what you wrote in (a) as 2 possible conversion factors with a numerator and denominator (put the numerator over the line and the denominator under the line).  Conversion factor #1 = 100 Cg Conversion factor #2 = 100 Cg  4 If the number that comes out of your calculator is the following, give the final correct number taking into account the significant figure and rounding up rules. Show work (3 pts) Only gracled  467.2 (240.2 - 1.227) = 1.95503  240.2  1,221  5 For the following either fill in the blank with the element symbol or the word for the element name. (I do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)  5 For the following either fill in the blank with the element symbol or the word for the element name. (I what the fill the fill the fill that the land t	2 Sand in water is an example of a [(heterogenous) or (homogenous)] mixture (circle one). (2 pts)
(b) rewrite what you wrote in (a) as 2 possible conversion factors with a numerator and denominator (put the numerator over the line and the denominator under the line).  Conversion factor #1 =     Conversion factor #2 =	
Conversion factor #1 =     O C Q   Conversion factor #2 =    O C Q Q   Conversion factor #2 =    O C Q Q   Conversion factor #2 =    O C Q Q Q   Conversion factor #2 =    O C Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	(a)(() () CentiGram = one gram
4 If the number that comes out of your calculator is the following, give the final-correct number taking into account the significant figure and rounding up rules. Show work (3 pts) Only gracled  467.2 (240.2 - 1.227) = 1.95503  240.2  519. figh of math  1,227  239. Odid not heed  238, 97 - 239. Odid not heed  5 For the following either fill in the blank with the element symbol or the word for the element name. (I do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)  5 Augustian fill in the blank with the element symbol or the word for the element name. (I watation	(put the numerator over the line and the denominator under the line).
into account the significant figure and rounding up rules. Show work (3 pts) Only gradled  467.2 (240.2 - 1.227) = 1.95503  240.2  519. fight muth  1,227  519. fight muth  238, 97 - 239. Odid not heed  538, 97 - 239. Odid not heed  538, 97 - 239. Odid not heed  549. fight to show  5 For the following either fill in the blank with the element symbol or the word for the element name. (I do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)  50 For the following either fill in the blank with the element symbol or the word for the element name. (I do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)  50 Ci light file  60 Add Spelling - 240. Odd Alberton  61 Add Spelling - 240. Odd Alberton  62 Add Spelling - 240. Odd Alberton  63 Add Spelling - 240. Odd Alberton  64 Add Spelling - 240. Odd Alberton  65 Add Spelling - 240. Odd Alberton  65 Add Spelling - 240. Odd Alberton  66 Add Spelling - 240. Odd Alberton  66 Add Spelling - 240. Odd Alberton  67 Add Spelling - 240. Odd Alberton  68 Add Spelling - 240. Odd Alberton  68 Add Spelling - 240. Odd Alberton  69 Add Spelling - 240. Odd Alberton  60 Add Spelling - 240. Odd Albe	Conversion factor #1 = $\frac{100 \text{ Cg}}{100 \text{ Cg}}$ Conversion factor #2 = $\frac{100 \text{ Cg}}{100 \text{ Cg}}$
For the following either fill in the blank with the element symbol or the word for the element name. (I do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)  Scientific watation	
For the following either fill in the blank with the element symbol or the word for the element name. (I do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)  Scientific  Watatao	1 = 1,221 239,0 did not need
do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)  Scientific  Scientific	(4 51 9 x1 9)
Cotatio-	do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)
CI_Chlorine_sodium_Wa_	bad spelling - Ist (chloride -1) (what sic)
	CI <u>Ch lorine</u> sodium <u>Na</u>

Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (8:30 am Tues, Thurs B) page 3

Part II Short Answer: Write the word or phrase or circle the choice that best completes each statement or answers the question. Some questions may require that you show work. If you do not show work, you may lose points. Even on questions which do not require work, if you legibly show

work, you may get some partial credit. (42 pts)

6. Fill in the blank with <b>one</b> of the following <b>letters</b> which best fits the circled portion of the periodic table. The letters may be used once, many times or not at all: (6 pts total, 3 pts each)
(a)transition metal elements (b) chalcogen (c) main group element (d) alkali metals (e) actinide / lanthanide (f) alkaline earth metals (g) transition metal element (h) halogens
Extra wrong-1).
Periodic Table of the Elements
Co. Pr. Mail. Sem. Sem. Err. Gill. To. Dr. Mei. Err. Tem. Yo. Li., vice leaves from home level of the control o
7. For the element Na  Period number is (a) (3) or (DA) ] (circle one)  Group number is (b) [30] or (IA) ] (circle one) (4 pts, 2 pts each)
8. Complete the following for the element given by consulting the periodic table: As has (10 pts, 1 pt each blank)
atomic mass $94.921b$ (give #) atomic number $95.00$ (give #) # protons $95.00$ (give #) # electrons (for neutral atoms) $95.00$ (give #)
# neutrons(give #). (show work for last part) (1 pt show work)
charge on the element (in its most common ionic state) is $\frac{-3}{5}$ (show work or explain) (1 pt show work) $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{3}$ (give number).
The molar mass of the element is $92929$ (give number).  A mole of the element above has $6002$ (give number).
Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (8:30 am Tues, Thurs B) page 4

1 Convert the following using dimensional analysis. Show work for partial and full credit. If you come up with the final correct numerical answer but show no work, you will lose all points. (17 pts)

Convert 32.55 pounds to liters (use density as a conversion factor, density = 4.22 grams / mL) (453. grams = pound)

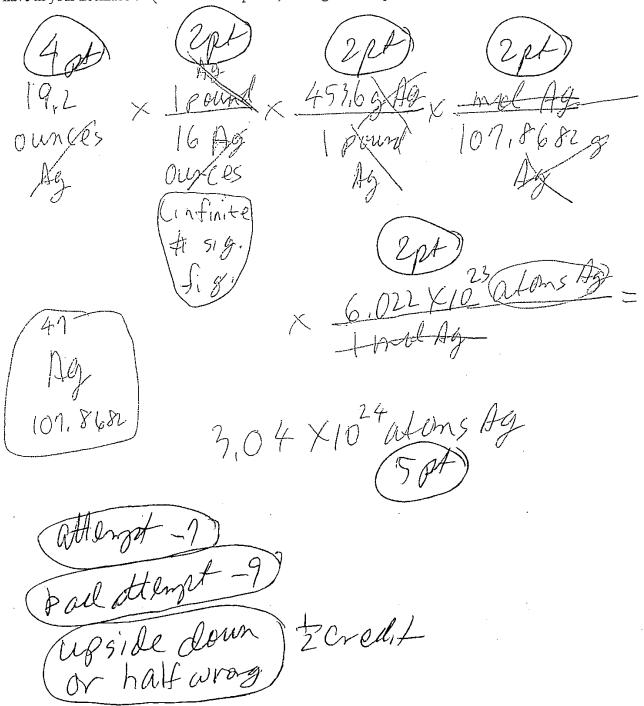
22.55 |b - Durate (3.55) |Poyed (4.22) (1000 ml) = 4.22) (1000 ml) = 4.22) (1000 ml) = 4.22) (1000 ml) = 35ig fig assuming not absolute #)

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Load attlempt - 9

Load attlemp

If you have a necklace made of solid silver (Ag) which weighs 19.2 ounces, how many atoms of Ag do you have in your necklace? (16 ounces = 1 pound, 453.6 grams = 1 pound,  $6.022 \times 10^{23}$  = Avogadro's number)



(NA = not atte	mstell		
Exam I General Chemistry I Lecture Spring 2014 1/2	8/14 Tuesday form 9:55 a	am A Dr. Hahn Exam#	
•	int) Name W=	ho work	(sign)
Please show work for partial credit and full credit on the choice questions have no partial credit. Please write a obviously cannot grade it. (1 pts print and sign exam) exam and clearly tell me where the remaining answer can Part I MULTIPLE CHOICE. Choose the one alternative partial credit for MC. (2 pts per question, 24 pts pts tot	nything you want graded by If you run out of space, plan be found. Avogadro's n  Hal Politication of the completes the	lease continue on the back particles = 6.022 × 10 <sup>23</sup>	page of the
1) Ag is an example of			1)
A) a compound. (C) an element.	B) a heterogeneou D) a homogeneous		
	1 -1		2)
<ul> <li>2) Which of the following are examples of physi</li> <li>A) salt is dissolved in water</li> <li>B) melt solid gold to liquid gold</li> <li>C) water freezes</li> <li>D) water (solid) to water (liquid)</li> </ul>			2)
(E) All of these are examples of physical cha			$\wedge$
<ol> <li>The recommended adult dose of Elixophyllin body mass. Calculate the dose in milligrams f</li> </ol>	②, a drug used to treat asthor a 115-lb person. 1 lb = $4$	53.59 g.	3) ———
·	) 24 (D) 313	E) $3.1 \times 10^5$	
4) Iodine belongs to the group of the p A) alkaline earth metal (C) halogen	eriodic table. B) alkali metal D) noble gas		4)
Date to the feeter 1	n33		5) B
5) What symbol is used to represent the factor 1  A) Mega  B) kilo	C) nano	D) micro	·
6) Which of the following contains the MOST at	oms? You shouldn't need t	o do a calculațio <del>n here.</del>	6)
A) 10.0 g Rb B) 10.0 g Cs C P( $\dot{g} = 1$ mel) $1.52$ $\dot{g} = 1$ mel 7) How many significant figures are in 0.005239	10.0 g Ca (D) 10.0 g 1 40, 1 g = 20 80 mL? 1 1	g Ne (5) 10.0 g Mg 1, 2 g (24, 3 g) mal (5) 10.0 g Mg	7) <u>E</u>
A) 3 B) 4	) 5 / h C D) 7	Elle 11200	~
. 8) Determine the number of protons, neutrons a ${}^{40}_{18}\mathrm{X}$	nd electrons in the followin	g:	8)
A) $p^+ = 22$ $n^\circ = 18$ $e^- = 18$			
B) $p^+ = 18$ $n^\circ = 18$ $e^- = 22$			
C) $p^+ = 40$ $n^\circ = 22$ $e^- = 18$			
D) $p^+ = 18$ $n^\circ = 22$ $e^- = 40$			
(E) $p^+ = 18$ $n^\circ = 22$ $e^- = 18$			

		Ì				١.
9) Which of A) S	the following elemen B) Kr	ts is a metal? ( Łb C) As	(e.ft 0	f pla	fall Oid live 9)	,) )
A) a ho B) an e C) a he D) a co	nce that can't be chemi omogeneous mixture. element. eterogeneous mixture. ompound. electron.	ically broken down into	simpler substance	s is	10)	7
A) Dal B) the C) the D the	ment, "In a chemical reton's Atomic Theory. Scientific Method. Law of Definite Propo Law of Conservation of Law of Multiple Propo	of Mass.	r created nor destro	yed" is called	11) <u>D</u>	
B)An a C) An a	n anion. atom that has gained a atom that has gained a atom that has lost an e atom that has lost a ne	n electron. lectron.		·	12)	<u>B</u>
#6 n	eed 1323	of (s f g of Ne ment Will	for 6.02.	2×10 <sup>23</sup> D2X1	Tome  1 <sup>23</sup> atoms	
(12)	mass sme	has he	OST # (Ne)	at ans	101	
(#) 115 per	16 × 47 pe	59 50 50 b	100	erson	IN CL	

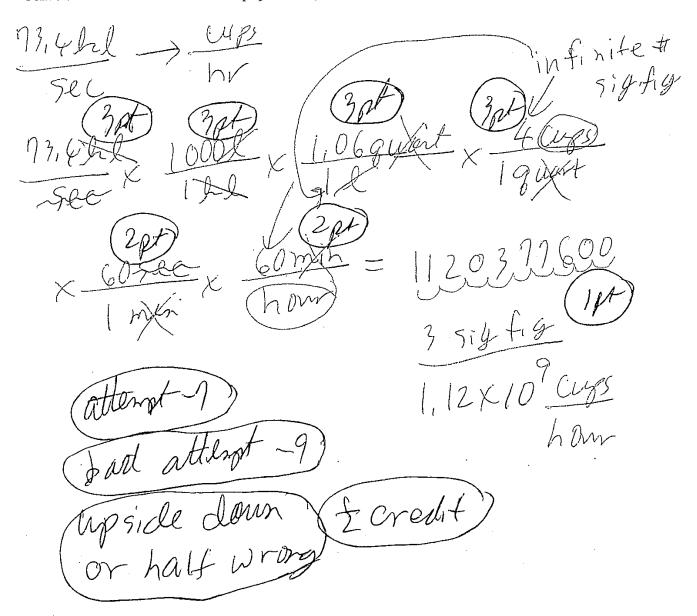
show work, you may lose points. Even on questions which do not require work, if you legibly show work, you may get some partial credit. (42 pts) From the given list, circle all compounds. You may want to look at the periodic table if you are unfamiliar with the symbols for the elements. (5 pts, 1 pts each) Fe Si Salt in water is an example of a ((homogenous) or (heterogenouse) ] mixture (circle one) (2 pts) 2. metric conversions (6 pts, 2 pts per blank) 3 MilliMeters = one meter (a) (b) rewrite what you wrote in (a) as 2 possible conversion factors with a numerator and denominator (put the numerator over the line and the denominator, under the line) Conversion factor #2 = Conversion factor #1 = If the number that comes out of your calculator is the following, give the final correct number take into account the significant figure and rounding up rules. Show work. (3 pts) For the following either fill in the blank with the element symbol or the word for the element name. do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each) copper General Chemistry I Lecture Exam I Spring 2014 form (9:55 Tues, Thurs A)

Part II Short Answer: Write the word or phrase or circle the choice that best completes each statement or answers the question. Some questions may require that you show work. If you do not

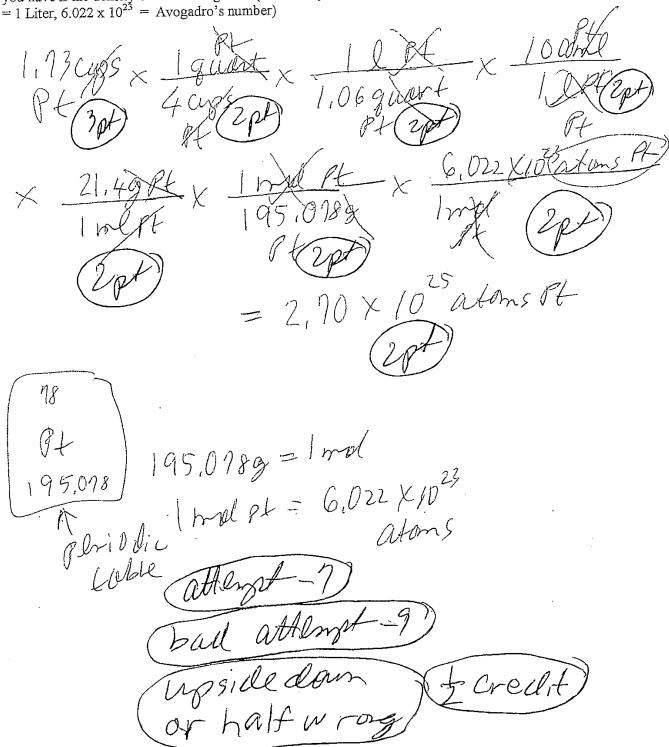
6. Fill in the blank with one of the following letters which best fits the circled portion of the periodic table. The letters may be used once, many times or not at all: (6 pts total, 3 pts each)
(a)transition metal elements (b) chalcogen (c) main group element (d) alkali metals (e) actinide / lanthanide (f) alkaline earth metals (g) transition metal element (h) halogens
$\bigcirc OV$
Periodic Table of the Elements
C. F. M. Pr. San En Gol To D. Ho Er Tan Yo Lu
7. For the element Se the Period number is (a) [ (4) or (VIA) ] (circle one) the Group number is (b) [ (4) or (VIA)] (circle one) (4 pts, 2 pts each)
8. Complete the following for the element given by consulting the periodic table: Ge has (10 pts, 1 pt each blank)
atomic number 32 (give #) atomic mass 72, 6 (give #)
# protons
# neutrons $4$ (give #). (show work for last part) (1 pt show work) $1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +$
charge on the element (in its most common ionic state) is $\frac{+40-4}{40}$ (show work or explain) (1 pt show work) (show work or explain) (1 pt could be +4 (tgray) #
A mole of the element above has 6,022 × 60 atoms (give number).
Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (9:55 Tues, Thurs A) page 4

Convert the following using dimensional analysis. Show work for partial and full credit. If you come up with the final correct numerical answer but show no work, you will lose all points. (17 pts)

Convert 73.4 kiloliter / seconds to cups per hour (1.06 quart = 1 Liter, 4 cups = quart)



If you have a piece of pure platinum (Pt) which occupies a volume of 1.73 cups, how many atoms of Pt do you have if the density of Pt is 21.4 g/mL (use density as a conversion factor)? (4 cups = 1 quart, 1.06 quart = 1 Liter 6.022 x  $10^{23}$  = Avogadro's number)



Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (9:55 Tues, Thurs A)

page 6

orange

Exam	I General Chemist	ry I Lecture	Spring 2014	4 1/28/14 Tues	day form 9:55 am F	B Dr. Hahn Exam#	
	1/01	,		/i() NTama	CALE no	+ attlan	(sign)
Name_	- KUG			(print) Name	111111111111111111111111111111111111111	1 WOWN TO	(81811)
choice obviou	questions have no pusly cannot grade it.	partial credit (1 pts print	. Please v and sign ex	vrite anything yo am)     If you  rur	ou want graded legib nout of space , please	the Short Answer Que ly. If I cannot read y continue on the back	our work, l
exam a	and clearly tell me			ver can be found	l. Avogadro's numb	$per = 6.022 \times 10^{-3}$	
Dawt I	Y\U\		a the one alt	ternative that he	est completes the stat	tement or answers the	question. No
partial	credit for MC. (2 p	ts per quest	ion, 24 pts p	ots total) /	$\frac{1}{1/2}$ h $0$	VONICO	•
I				(///	N / 1 / 2		1)
	A) 10.0 g Mg		ons the MC 0.0 g Ca	C) 10.0 g Rb	shouldn't need to do D) 10.0 g Cs	E) 10.0 g Ne	*/
	ON IAM-interest the following	llarizina alam	onta is a mo	+a12			2)
	2) Which of the fol A) As	помиля елепт В) К		C) S	D) Br	(E) Fe	-/ <u></u>
	A) As	<i>D</i> ) IC	· ,	C) 5	-,	$\cup$	./
	3) A substance tha	at can't be ch	emically bro	ken down into s	impler substances is		3) _/
	(A) an elemen B) a heteroge C) a homoge D) a compou E) an electro	it. eneous mixtu neous mixtu nd.	ıre.				
	4) How many sign A) 7	nificant figur B) 4	es are in 0.00	0523980 mL? C) 3	D) 5	E 6	4)
	5) Which of the form A) water free B) water (sol C) salt is dissect D) melt solid (E) All of these	ezes id) to water : solved in wat gold to liqui	(liquid) ter id gold	,	?		5)
	6) Iodine belongs A) alkaline e C) alkali met	to thearth metal		f the periodic tab	ole. Dhalogen ) noble gas		6) <u>B</u>
	7) Determine the r	number of pr	otons, neutr	ons and electror	ns in the following:		7) <u>C</u>
	A) p+ = 40	$n^{\circ} = 22$	$e^{-} = 18$				
		n° = 18	$e^{-} = 18$				
			$e^{-} = 18$				
	D) $p^+ = 18$	n° = 22	$e^- = 40$				
	E) $p^+ = 18$	$n^{\circ} = 18$	e = 22				

8) Ag is an exam	•	$\bigcirc$ 1			8)
	neous mixture.	(B)'/a	n element.		
C) a heterog	eneous mixture.	D) a	compound.		
	NEC.				10
9) What symbol is	s used to represent the factor	103?	•		9)
A) micro	B) nano	C) N	lega 💮	(D) kilo	
i w iii	# 14 Annual Process			•	0
10) Identify an ani	on.				10) 15
A) An atom	that has lost an electron.				
(B))An atom	that has gained an electron.				
C) An atom	that has gained a neutron.				
D) An atom	that has lost a neutron and a	proton.			
					n
11) The statement,	"In a chemical reaction, mat	ter is neither cre	ated nor destroye	d" is called	11) #
	f Conservation of Mass.		•		<del></del>
\2	f Definite Proportions.				
•	Atomic Theory.				
D) the Scient					
	f Multiple Proportions.				
	-				Λ .
12) The recommen	ded adult dose of Elixophyll	in®, a drug use	d to treat asthma,	is 6.00 mg / 1000 g of	12)
	culate the dose in milligram				• •
(A) 313	1	C) 3.1 × 10 <sup>5</sup>	D) 1,521	E) 1.5	

Part II Short Answer: Write the word or phrase or circle the choice that best completes each statement or answers the question. Some questions may require that you show work. If you do not show work, you may lose points. Even on questions which do not require work, if you legibly show work, you may get some partial credit. (42 pts) From the given list, circle all elements. You may want to look at the periodic table if you are unfamiliar with the symbols for the elements. (5 pts, 1 pts each)  $CH_4$ AgBr Salt in water is an example of a [ (heterogenous) or (homogenous) ] mixture (circle one) (2 pts) 2 metric conversions (6 pts, 2 pts per blank) 3 gram = one KiloGram (a) rewrite what you wrote in (a) as 2 possible conversion factors with a numerator and denominator (b) (put the numerator over the line and the denominator under the line ersion factor #2 = Conversion factor #1 =If the number that comes out of your calculator is the following, give the final correct number taking into account the significant figure and rounding up rules. Show work. (3 pts) 50.227 / (73.2 - 0.08) = 0.686911925

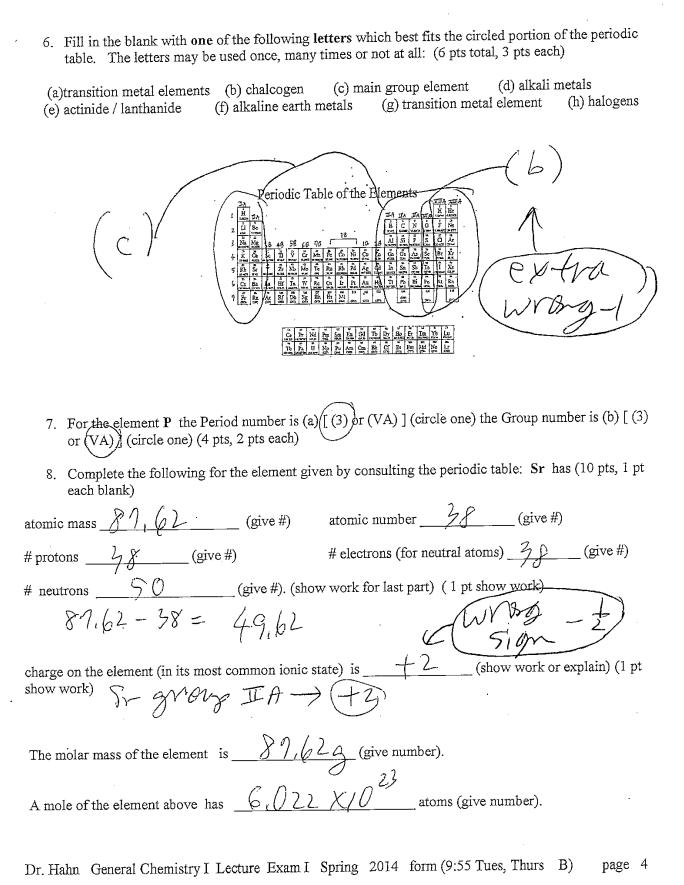
o vry zen silver 170 - Scien hotal

For the following either fill in the blank with the element symbol or the word for the element name

Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (9:55 Tues, Thurs B)

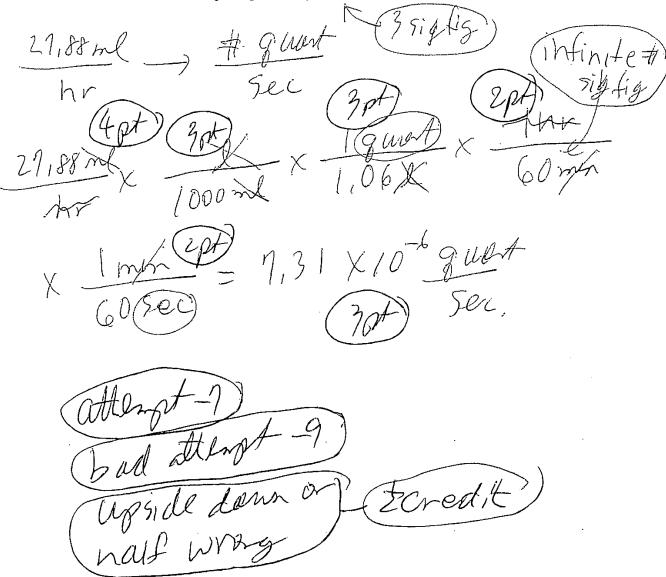
do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)

page 3

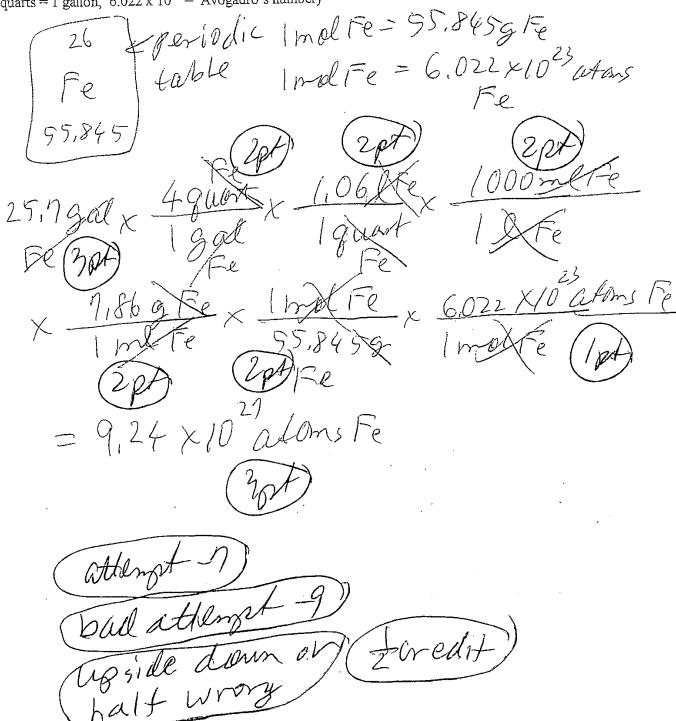


Convert the following using dimensional analysis. Show work for partial and full credit. If you 1 come up with the final correct numerical answer but show no work, you will lose all points. (17 pts)

Convert 27.88 milliLiter / hour to quarts per second (1.06 liter = 1 quart)



If you have a piece of pure iron (Fe) which occupies a volume of 25.7 gallons, how many atoms of Fe do you have if the density of the Fe is 7.86 g/mL (use density as a conversion factor)? (1.06 liter = 1 quart, 4 quarts = 1 gallon,  $6.022 \times 10^{23}$  = Avogadro's number)



Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (9:55 Tues, Thurs B) page 6

me				(print) Nar	ne			(sign)
iously n and I M	cannot grade it clearly tell me t	. (1 pts print where the rer	and sign ex naining answ	write anything ram) If you rewer can be four	you want un out of s nd. Ανοξ	graded legi pace, pleas gadro's nun	of the Short Answer Qubly. If I cannot read see continue on the backaber $\approx 6.022 \times 10^{23}$	your work, I page of the
		os per quesi	ion, 24 pts p	ois total)				1
-1)	Determine the r	tuntber of pr	otons, neutr	ons and electro	ons in the f	following:		1)
	A) $p^+ = 29$	n° = 36	e~ = 36					
	B) $p^+ = 29$							
	C) $p^+ = 29$	$n^{\circ} = 36$	$e^{-} = 29$					
	D) $p^{+} = 36$	$n^{\circ} = 29$	e~ = 36					
	E) $p^+ = 36$	n° = 36	$e^{-} = 29$					
2) ]	How many sign	ificant figure	s are in the	measurement,	463.090 m	?		2)
	A) 5	B) 2		C) 4		) 6	E) 3	2)
	<ul><li>A) an amorph</li><li>B) a compour</li><li>C) a homoger</li><li>D) a solution.</li><li>E) a heteroger</li></ul>	nd. neous mixtur	e.	, , , , , ,	and comp		ariable throughout are	3)
4) T	The statement, ".  A) the Law of B) the Law of C) Dalton's A- D) the Law of E) the Scientif	Conservatio Multiple Pro tomic Theory Definite Proj	n of Mass. portions.	atter is neither	created no	or destroyed	d" is called	4)
5) V	Vhich of the foll A) N	owing eleme B) Be	nts is a alkal	i metal? C) Ce	D	) K	E) Br	5)
6) W	Vhich of the follow	owing eleme B) Be	nts is a nonr	netal? C) N	D	) Ce	E) K	6)
7) W	Vhich of the follo A) 10.0 g Na	owing contai B) 10.0	ns the FEWI ) g Ar	EST atoms? Yo C) 10.0 g Cs	ou shouldr D	i't need to d ) 10.0 g Li	o a calculation here. E) 10.0 g Kr	7)
Dr. H	Hahn General (	Chemistry I I	ecture	Exam I	Spring	2014	8:30 form A pag	e 1

8) The recommend	ded adult dose of Elixopl	nyllin®, a drug use	d to treat asthma	, is 6.00 mg / 1000 g of	8)
body mass. Cal	culate the dose in milligr	ams for a 115-lb pe	erson. $1 \text{ Ib} = 453.5$	59 g.	
A) 24	B) 1.5	C) 1,521	D) 3.1 × 10 <sup>5</sup>	_	
9) The factor $10^{-3}$	corresponds to which pr	refix?			9)
A) deka	B) milli	C) ce	nti	D) deci	,
10) NO <sub>2</sub> is an exam	pple of				10)
A) a heteroge C) a compou	eneous mixture.	•	element.		,
С) а сопіроц	iid.	D) a i	nomogeneous mi	xture.	
11) Identify a cation	n.				11)
	hat has lost an electron.				
	hat has gained a neutron				
C) An atom t	hat has lost a proton and	a neutron.			
D) An atom t	hat has gained an electro	n.			
	lowing are examples of p	hysical change?			12)
	olved in water				-
	d) to water (liquid)				
C) water freez					•
	gold to liquid gold				
E) All of these	e are examples of physica	I change.			

Part II Short Answer: Write the word or phrase or circle the choice that best completes each statement or answers the question. Some questions may require that you show work. If you do not show work, you may lose points. Even on questions which do not require work, if you legibly show work, you may get some partial credit. (42 pts)
1 From the given list, circle all compounds. You may want to look at the periodic table if you are unfamiliar with the symbols for the elements. (5 pts, 1 pts each)
$F_2$ $SiO_2$ $K$ $H_2$ $AlCl_3$
2 Sand in water is an example of a [ ( homogenous) or (heterogenous) ] mixture (circle one). (2 pts)
metric conversions (6 pts, 2 pts per blank)
(a) one KiloLiter =L
(b) rewrite what you wrote in (a) as 2 possible conversion factors with a numerator and denominator (put the numerator over the line and the denominator under the line)
Conversion factor #1 = Conversion factor #2 =
4 If the number that comes out of your calculator is the following, give the final correct number taking into account the significant figure and rounding up rules. Show work. (3 pts)
(13.21+300.2)*2.6 = 814.866
For the following either fill in the blank with the element symbol or the word for the element name. (I do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)
Knitrogen
Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (8:30T,R form A) page 3

6. Fill in the blank with one table. The letters may be	e of the following e used once, many	letters who	ich best fits the cinnot at all: (6 pts to	rcled portion of otal, 3 pts each)	f the periodic
(a)transition metal elements (e) actinide / lanthanide	(b) chalcogen (f) alkaline earth	(c) main metals	group element (g) transition me	(d) alkali me tal element	etals (h) halogens
	Periodic Ta	ble of the E	lements _		
•	世   世   大	F6   16 21   16 22   16 F6   Co Ni Co Z 2   16 F6   Co Ni Co Z 2   17   17   17   17   17   17   17	TA IIA IIA IIA		
	Ce 2: No. 1 to 1	Pm Sm Eu Gd Th	Dy Ho Er Tim Yo Lu- con permanent on the con- con permanent on the con		
7. For the element <b>B</b>					
Group number is (a) [(2)	or (IIIA) ] (circle	one)			
Period number is (b) [(2)	or (IIIA) ] (circle	one) (4 pts	s, 2 pts each)		
8. Complete the following for each blank)	r the element give	en by const	ulting the periodic	table: Ca ha	s (10 pts, 1 pt
atomic mass	(give #)	atomic nu	ımber	_(give #)	
# protons(give	#)	# electron	s (for neutral aton	ns)	(give #)
# neutrons	(give #). (show	work for l	last part) (1 pt sh	ow work)	
charge on the element (in its most show work)					oplain) (1 pt
The molar mass of the element is	S	(give	number).		
A mole of the element above has			atoms (give	number).	
Dr. Hahn General Chemistry I	Lecture Exam	ı I Spring	2014 form (8:3	30T,R form A)	page 4

1 Convert the following using dimensional analysis. Show work for partial and full credit. If you come up with the final correct numerical answer but show no work, you will lose all points. (17 pts)

Convert 1.72 cups to grams (use density as a conversion factor, density = 1.00 grams / mL) (1.06 liter = quart, 4 cups = 1 quart)

If you have a block of gold (Au) which weighs 73.5 pounds, how many atoms of gold do you have in your block of gold? (453.6 grams = one pound,  $6.022 \times 10^{23}$  = Avogadro's number)

	<del></del>	(Pimit) INam	e		(sign)
Please show work for par choice questions have no obviously cannot grade it exam and clearly tell me t	partial credit. Plea :. (1 pts print and sig	ase write anything y n exam) - If you-ru	ou want graded legib n out of space , please	ly. If I cannot rea continue on the ba	d vour work I
Part I MULTIPLE CHO partial credit for MC. (2 <sub>I</sub>	ICE. Choose the on ots per question, 24 <sub>J</sub>	e alternative that boots pts total)	est completes the stat	tement or answers	the question.
B) An atom ( C) An atom (	n. that has lost a proton that has gained an ele that has gained a neu that has lost an electr	ectron. itron.			1)
2) Which of the fo	llowing elements is a B) Ce	alkali metal? C) N	D) Br	E) Be	2)
A) the Scienti B) the Law o C) the Law o D) Dalton's A	'In a chemical reaction  If Method.  If Conservation of Man  If Multiple Proportion  Itomic Theory.  If Definite Proportion	iss.	created nor destroyed	l" is called	3)
4) How many sign A) 6	ificant figures are in B) 4	the measurement, 4 C) 2	63.090 m? D) 5	E) 3	4)
5) The recommend body mass. Calc	ed adult dose of Elix rulate the dose in mil	ophyllin®, a drug ı ligrams for a 115-lb	used to treat asthma, i person. 1 lb = 453.59	s 6.00 mg / 1000 g o g.	of 5)
A) 24	B) 1.5	C) 313	D) $3.1 \times 10^5$	E) 1,521	
6) NO <sub>2</sub> is an exam A) an element C) a heteroger	•		a homogeneous mixt	ture.	6)
7) Which of the foll A) K	owing elements is a management of the B) Br	nonmetal? C) Be	D) Ce	E) N	7)
A) a homogen	eous mixture. neous mixture. d.	roportions, where t	he composition is vari	iable throughout ar	e 8)

· · · · · · · · · · · · · · · · · · ·						
9) Which of the followin A) 10.0 g Cs	ng contains the FEW B) 10.0 g Li	EST atoms? You sho C) 10.0 g Ar	ıldn't need to do a o D) 10.0 g Na	calculation here. E) 10.0 g Kr	9)	
10) Which of the following are examples of physical change?  A) water (solid) to water (liquid)  B) salt is dissolved in water  C) melt solid gold to liquid gold  D) water freezes  E) All of these are examples of physical change.						
11) The factor 10 <sup>-3</sup> corre	sponds to which pre	Ü			11)	
A) milli	B) deka	C) deci	D)	centi		
12) Determine the number	er of protons, neutror	ns and electrons in the	e following:		12)	
65 29 X						
A) $p^+ = 29^{\circ}$ n° B) $p^+ = 36$ n°	$=36$ $e^{-}=36$					
_:						
C) $p^+ = 36$ : $n^\circ$ : D) $p^+ = 29$ : $n^\circ$ :						
D) p+ = 29 ⅓ n° :						

show work, you may lose points. Even on questions which do not require work, if you legibly show work, you may get some partial credit. (42 pts)
From the given list, circle elements. You may want to look at the periodic table if you are unfamilia with the symbols for the elements. (5 pts, 1 pts each)
$F_2$ $SiO_2$ $K$ $H_2$ $AlCl_3$
Sand in water is an example of a [ (heterogenous) or (homogenous)] mixture (circle one). (2 pts)
metric conversions (6 pts, 2 pts per blank)
(a) CentiGram = one gram
(b) rewrite what you wrote in (a) as 2 possible conversion factors with a numerator and denominator (put the numerator over the line and the denominator under the line)
Conversion factor #1 = Conversion factor #2 =
4 If the number that comes out of your calculator is the following, give the final correct number taking into account the significant figure and rounding up rules. Show work. (3 pts)
467.2 / (240.2 – 1.227) = 1.95503
For the following either fill in the blank with the element symbol or the word for the element name. (do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)
Cl sodium
Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (8:30 am Tues, Thurs B) page 3

Part  $\Pi$  Short Answer: Write the word or phrase or circle the choice that best completes each statement or answers the question. Some questions may require that you show work. If you do not

6. table.	Fill in the blank with one The letters may be used	e of the following le	tters whi not at all	ch best fits the circle (6. pts total, 3 pts	cled portion (s each)	of the periodic
(a) (e)	transition metal elements actinide / lanthanide	(b) chalcogen (f) alkaline earth m	(c) main etals	group element (g) transition meta	(d) alkali n al element	netals (h) halogens
		Periodic Table	a of the Di	am anta		
		1		TA HA TA		
		Co P Nd Pm Th Pa U Sp	Sin Bu Gd Tb	Ho By In Yo In.		
7.	For the element <b>Na</b>					
	Period number is (a) [ (3)	or (IA) ] (circle one	)			
	Group number is (b) [(3)	or (IA) ] (circle one	) (4 pts, 2	t pts each)		
8.	Complete the following for each blank)	or the element given	by consu	Iting the periodic	table: As h	as (10 pts, 1 pt
atomic 1	mass	(give #)	ato	mic number	(give	e#)
# protor	ns(give	#)	# e	lectrons (for neutr	ral atoms)	(give #)
# neutro	ons	(give #). (show w	vork for l	ast part) (1 pt sho	ow work)	
charge o	on the element (in its most ork)	common ionic state	) is	(sh	ow work or e	explain) (1 pt
The mo	lar mass of the element i	S	(give	number).		
A mole	of the element above has			atoms (give n	umber).	
Dr. Hahı	1 General Chemistry I Le	ecture Exam I Spi	ring 201	4 form (8:30 am	Tues, Thurs	B) page 4

1 Convert the following using dimensional analysis. Show work for partial and full credit. If you come up with the final correct numerical answer but show no work, you will lose all points. (17 pts)

Convert 32.55 pounds to liters (use density as a conversion factor, density = 4.22 grams / mL) (453.2 grams = pound)

If you have a necklace made of solid silver (Ag) which weighs 19.2 ounces, how many atoms of Ag do you have in your necklace? (16 ounces = 1 pound, 453.6 grams = 1 pound,  $6.022 \times 10^{23} = \text{Avogadro's number}$ )

Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (8:30 am Tues, Thurs B) page 6

Name	vork, I of the
choice questions have no partial credit. Please write anything you want graded legibly. If I cannot read your v obviously cannot grade it. (1 pts print and sign exam) If you run out of space, please continue on the back page	vork, I of the
Part I MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the ques	
partial credit for MC. (2 pts per question, 24 pts pts total)	
1) Ag is an example of A) a compound. B) a heterogeneous mixture. C) an element. D) a homogeneous mixture.	
2) Which of the following are examples of physical change?  A) salt is dissolved in water  B) melt solid gold to liquid gold  C) water freezes  D) water (solid) to water (liquid)  E) All of these are examples of physical change.	
3) The recommended adult dose of Elixophyllin®, a drug used to treat asthma, is 6.00 mg / 1000 g of body mass. Calculate the dose in milligrams for a 115–lb person. 1 lb = 453.59 g.  A) 1.5  B) 1,521  C) 24  D) 313  E) 3.1 × 10 <sup>5</sup>	·
4) Iodine belongs to the group of the periodic table.  A) alkaline earth metal  B) alkali metal  C) halogen  D) noble gas	
5) What symbol is used to represent the factor 10 <sup>3</sup> ?	
A) Mega B) kilo C) nano D) micro	
6) Which of the following contains the MOST atoms? You shouldn't need to do a calculation here.  A) 10.0 g Rb  B) 10.0 g Cs  C) 10.0 g Ca  D) 10.0 g Ne  E) 10.0 g Mg	
7) How many significant figures are in 0.00523980 mL? A) 3 B) 4 C) 5 D) 7 E) 6	
8) Determine the number of protons, neutrons and electrons in the following: $\frac{40}{18}$ X	
A) $p^+ = 22$ $n^\circ = 18$ $e^- = 18$	
B) $p^+ = 18$ $n^\circ = 18$ $e^- = 22$	
C) $p^+ = 40$ $n^\circ = 22$ $e^- = 18$	
D) $p^+ = 18$ $n^o = 22$ $e^- = 40$	
E) $p^+ = 18$ $n^\circ = 22$ $e^- = 18$	

1

9) Which of the following elements is a metal? A) S B) Kr C) As D) Fe E) Br  10) A substance that can't be chemically broken down into simpler substances is A) a homogeneous mixture.
10) A substance that can't be chemically broken down into simpler substances is  A) a homogeneous mixture
B) an element.
C) a heterogeneous mixture.
D) a compound.
E) an electron.
11) The statement, "In a chemical reaction, matter is neither created nor destroyed" is called 11)
A) Dalton's Atomic Theory.
B) the Scientific Method.
C) the Law of Definite Proportions.
D) the Law of Conservation of Mass.
E) the Law of Multiple Proportions.
12) Identify an anion.
A) An atom that has gained a neutron.
B) An atom that has gained an electron.
C) An atom that has lost an electron.
D) An atom that has lost a neutron and a proton.

statement or answers the question. Some questions may require that you show work. If you do not show work, you may lose points. Even on questions which do not require work, if you legibly show work, you may get some partial credit. (42 pts)
From the given list, circle all compounds. You may want to look at the periodic table if you are unfamiliar with the symbols for the elements. (5 pts, 1 pts each)
AgBr Fe Si $CH_4$ $N_2$
2. Salt in water is an example of a [ (homogenous) or (heterogenouse) ] mixture (circle one) (2 pts)
metric conversions (6 pts, 2 pts per blank)
(a) MilliMeters = one meter
(b) rewrite what you wrote in (a) as 2 possible conversion factors with a numerator and denominator (put the numerator over the line and the denominator under the line)
Conversion factor #1 = Conversion factor #2 =
4 If the number that comes out of your calculator is the following, give the final correct number taking into account the significant figure and rounding up rules. Show work. (3 pts)
(300.2 – 1.777) / 1.2 = 248.685833
5 For the following either fill in the blank with the element symbol or the word for the element name. (I do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)
Fcopper
Dr. Hahn General Chemistry I Lecture Exam I Spring 2014 form (9:55 Tues, Thurs A) page 3

6. Fill in the blank with or table. The letters may	ne of the following be used once, man	letters why times or	nich best fits the cirnot at all: (6 pts to	cled portion of tal, 3 pts each	of the periodic
(a)transition metal element (e) actinide / lanthanide	s (b) chalcogen (f) alkaline earth	(c) mai metals	n group element (g) transition met		netals (h) halogens
	٠				
	Periodic Ta	able of the F	llements		
	1   1   1   1   1   1   1   1   1   1	78 10 10 10 10 10 10 10 10 10 10 10 10 10	1		
	Cc Pr Miles and	H R GH KH	Dy Ho E Im Y La Constant and the Constant Constant and Constant and Constant Constant and Constant and Constant Constant and Constant and Consta		
<ul><li>7. For the element Se the For (VIA)] (circle one) (4</li><li>8. Complete the following the each blank)</li></ul>	pts, 2 pts each)				
atomic number(giv	re #)	at	omic mass		(give #)
# protons(giv	e #)	#	electrons (for neutr	ral atoms)	(give #)
# neutrons	(give #). (show	work for	last part) (1 pt sho	ow work)	
charge on the element (in its mos show work)	t common ionic sta	ate) is	(sh	ow work or e	xplain) (1 pt
The molar mass of the element	is	(give	number).		
A mole of the element above has	5		atoms (give n	umber).	
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Part III. Long Answer Please show work for full credit and to receive partial credit. (34 pts)

\*\*\*\* Please attempt every problem for partial credit. You will get no partial credit if you just rewrite
the question with no change in anything.\*\*\*\*

1 Convert the following using dimensional analysis. Show work for partial and full credit. If you come up with the final correct numerical answer but show no work, you will lose all points. (17 pts)

Convert 73.4 kiloliter / seconds to cups per hour (1.06 quart = 1 Liter, 4 cups = quart)

2. Use the definition of the mole to answer this question. Show work for partial and full credit. If you come up with the final correct numerical answer but show no work, you will lose all points. (17 pts)

If you have a piece of pure platinum (Pt) which occupies a volume of 1.73 cups, how many atoms of Pt do you have if the density of Pt is 21.4 g/mL (use density as a conversion factor)? (4 cups = 1 quart, 1.06 quart = 1 Liter,  $6.022 \times 10^{23}$  = Avogadro's number)

Exam	I General Chemis	stry I Lecture	Spring 201	4 1/28/14 Tue	sday form 9:55 am	B Dr. Hahn Exam	#
Name_				(print) Nam	e		(sign)
choice obviou exam a	questions have no usly cannot grade i and clearly tell me	partial credi t. (1 pts prin where the re	t. Please v t and sign ex naining ans	write anything y am) If you ru wer can be foun	ou want graded legil n out of space , pleas d. Avogadro's num		your work, I c page of the
	MULTIPLE CHO credit for MC. (2				est completes the sta	tement or answers th	e question. No
	1) Which of the fo A) 10.0 g M			OST atoms? You C) 10.0 g R	shouldn't need to do b D) 10.0 g C		1)
	2) Which of the fo	ollowing elen B) K		etal? C) S	D) Br	E) Fe	2)
	A) an eleme B) a heterog	nt. geneous mixtu eneous mixtu und.	ıre.	oken down into	simpler substances is		3)
	4) How many sig A) 7	nificant figur B) 4		0523980 mL? C) 3	D) 5	E) 6	4)
	C) salt is dis D) melt solic	_	(liquid) ter id gold		?		5)
	6) Iodine belongs A) alkaline e C) alkali me	earth metal	group of	E	ole. 3) halogen 9) noble gas		6)
	7) Determine the : 40 X	number of pr	otons, neutr	ons and electror	ns in the following:		7)
	A) p <sup>+</sup> = 40 B) p <sup>+</sup> = 22 C) p <sup>+</sup> = 18 D) p <sup>+</sup> = 18 E) p <sup>+</sup> = 18	$n^{\circ} = 18$ $n^{\circ} = 22$	$e^{-} = 18$ $e^{-} = 18$ $e^{-} = 40$				

8) Ag is an example o	t				8)	
A) a homogeneo	us mixture.	В) а	n element.		صـــــ	
C) a heterogeneo	us mixture.	•	compound.			
		,	1			
9) What symbol is use	d to represent the fa	ctor 103?			0)	
A) micro	=				9)	
71) Hacro	B) nano	C) N	1ega	D) kilo		
10) Identify an anion.						
	one look on alastur.				10)	
	nas lost an electron.					
C) An atom that I	nas gained an electro	on.				
C) An atom that I	nas gained a neutror	l.				
D) An atom that I	nas lost a neutron an	d a proton.				
11) The statement, "In a	chemical reaction, n	natter is neither crea	ated nor destroye	ed" is called	11)	
A) the Law of Cor	nservation of Mass.		<i>J</i> .		**/ <u> </u>	
B) the Law of Def						
C) Dalton's Atom						
D) the Scientific M						
	ltiple Proportions.					
2) 210 Davi OI 1110	rupic i roportions.					
12) The recommended of	dealt dans - C Elice - 1	11: 65 7				
12) The recommended a	duit dose of Enxopn	ylline, a drug used	d to treat asthma,	, is 6.00 mg / 1000 g of	12)	
body mass. Calculate		ams for a 115-lb pe	rson. 1 lb = 453.5	9 g.		
A) 313	B) 24	C) $3.1 \times 10^5$	D) 1,521	E) 1.5		

Part II Short Answer: Write the word or phrase or circle the choice that best completes each statement or answers the question. Some questions may require that you show work. If you do not show work, you may lose points. Even on questions which do not require work, if you legibly show work, you may get some partial credit. (42 pts)
From the given list, circle all elements. You may want to look at the periodic table if you are unfamiliar with the symbols for the elements. (5 pts, 1 pts each)
AgBr Fe Si CH <sub>4</sub> N <sub>2</sub>
2 Salt in water is an example of a [ (heterogenous) or (homogenous) ] mixture (circle one) (2 pts)
3 metric conversions (6 pts, 2 pts per blank)
(a) gram = one KiloGram
(b) rewrite what you wrote in (a) as 2 possible conversion factors with a numerator and denominator (put the numerator over the line and the denominator under the line)
Conversion factor #1 = Conversion factor #2 =
4 If the number that comes out of your calculator is the following, give the final correct number taking into account the significant figure and rounding up rules. Show work. (3 pts)
50.227 / (73.2 – 0.08) = 0.686911925
For the following either fill in the blank with the element symbol or the word for the element name. (I do not count off for small spelling errors in naming elements.) (6 pts, 3 pts each)
O silver
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6. Fill in the blank with one table. The letters may be	of the following used once, ma	g letters winy times or	hich best fits the not at all: (6 pts	circled portion total, 3 pts eac	of the periodic
(a)transition metal elements (e) actinide / lanthanide	(b) chalcogen (f) alkaline eart	(c) ma h metals	in group elemen (g) transition r	t (d) alkali netal element	metals (h) halogens
	Periodic 7	Table of the	Elements		
	1		THE TA THE HE		
	Ce Property of the Control of the Co	Nd Pm Sm Eu Gd 1	D   D   F   D   D   D   D   D   D   D		
7. For the element <b>P</b> the Peror (VA) ] (circle one) (4 p	iod number is (a ts, 2 pts each)	a) [ (3) or (	VA)](circle one	e) the Group nu	mber is (b) [ (3)
8. Complete the following for each blank)	r the element gi	ven by con	sulting the perio	dic table: Sr h	as (10 pts, 1 pt
atomic mass					
# protons(give	#)	# electro	ons (for neutral a	toms)	(give #)
# neutrons	(give #). (sho	w work for	last part) (1 pt	show work)	
charge on the element (in its most show work)	common ionic s	state) is		(show work or	explain) (1 pt
The molar mass of the element i	S	(giv	re number).		
A mole of the element above has	•		atoms (giv	ve number).	
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Part III. Long Answer Please show work for full credit and to receive partial credit. (34 pts)

\*\*\*\* Please attempt every problem for partial credit. You will get no partial credit if you just rewrite
the question with no change in anything.\*\*\*\*

1 Convert the following using dimensional analysis. Show work for partial and full credit. If you come up with the final correct numerical answer but show no work, you will lose all points. (17 pts)

Convert 27.88 milliLiter / hour to quarts per second (1.06 liter = 1 quart)

2. Use the definition of the mole to answer this question. Show work for partial and full credit. If you come up with the final correct numerical answer but show no work, you will lose all points. (17 pts)

If you have a piece of pure iron (Fe) which occupies a volume of 25.7 gallons, how many atoms of Fe do you have if the density of the Fe is 7.86 g/mL (use density as a conversion factor)? (1.06 liter = 1 quart, 4 quarts = 1 gallon,  $6.022 \times 10^{23}$  = Avogadro's number)