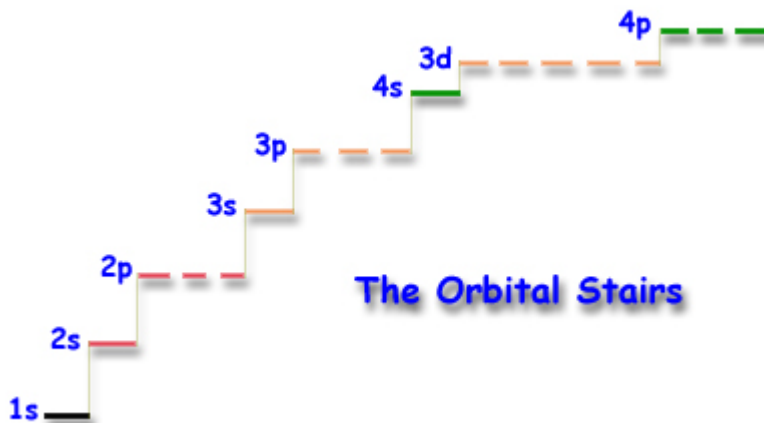


The Periodic Table

												<i>VIIIA</i>						
<i>IA</i> H 1 1.01																He 2 4.00		
<i>IIA</i>												<i>IIIA</i>	<i>IVA</i>	<i>V A</i>	<i>VIA</i>	<i>VIIA</i>		
Li 3 6.94	Be 4 9.01											B 5 10.81	C 6 12.01	N 7 14.01	O 8 16.00	F 9 19.00	Ne 10 20.18	
Na 11 22.99	Mg 12 24.31											Al 13 26.98	Si 14 28.09	P 15 30.97	S 16 32.07	Cl 17 35.45	Ar 18 39.95	
		<i>IIIB</i>	<i>IVB</i>	<i>VB</i>	<i>VIB</i>	<i>VII B</i>	<i>VIII B</i>	<i>VIII B</i>	<i>VIII B</i>	<i>IB</i>	<i>IIB</i>							
K 19 39.10	Ca 20 40.08	Sc 21 44.96	Ti 22 47.88	V 23 50.94	Cr 24 52.00	Mn 25 54.94	Fe 26 55.85	Co 27 58.93	Ni 28 58.69	Cu 29 63.55	Zn 30 65.39	Ga 31 69.72	Ge 32 72.61	As 33 74.92	Se 34 78.96	Br 35 79.90	Kr 36 83.80	
Rb 37 85.47	Sr 38 87.62	Y 39 88.91	Zr 40 91.22	Nb 41 92.91	Mo 42 95.94	Tc 43 (97.9)	Ru 44 101.07	Rh 45 102.91	Pd 46 106.42	Ag 47 107.87	Cd 48 112.41	In 49 114.82	Sn 50 118.71	Sb 51 121.76	Te 52 127.60	I 53 126.90	Xe 54 131.29	
Cs 55 132.91	Ba 56 137.33	La 57 138.91	Hf 72 178.49	Ta 73 180.95	W 74 183.85	Re 75 186.21	Os 76 190.2	Ir 77 192.22	Pt 78 195.08	Au 79 197.97	Hg 80 200.59	Tl 81 204.38	Pb 82 207.2	Bi 83 208.98	Po 84 (209)	At 85 (210)	Rn 86 (222)	
Fr 87 223.02	Ra 88 226.03	Ac 89 227.03	Rf 104 (261)	Db 105 (262)	Sg 106 263)	Bh 107 (262)	Hs 108 (265)	Mt 109 (266)	Ds 110 (271)	Rg 111 (272)	Uub 112 (285)	Uut 113 (284)	Uuq 114 (289)	Uup 115 (288)				

Ce 58 140.12	Pr 59 140.91	Nd 60 144.24	Pm 61 (145)	Sm 62 150.36	Eu 63 152.97	Gd 64 157.25	Tb 65 158.93	Dy 66 162.50	Ho 67 164.93	Er 68 167.26	Tm 69 168.93	Yb 70 173.04	Lu 71 174.97
Th 90 232.04	Pa 91 231.04	U 92 238.03	Np 93 237.05	Pu 94 (240)	Am 95 243.06	Cm 96 (247)	Bk 97 (248)	Cf 98 (251)	Es 99 252.08	Fm 100 257.10	Md 101 (257)	No 102 259.10	Lr 103 262.11



SID

--	--	--	--	--	--	--	--	--	--

Last _____ First _____

Question 1 How many **significant figures** are there in each of the following numbers?

6 Points

- a. 57.44 _____ c. 3.40×10^3 _____
 b. 0.065 _____

Question 2 a. When **36.456** is added to **74.2**, the result should be reported to how many decimal places? _____

6 Points

b. The number **26.71560...** rounded to **4** significant figures is: _____

c. Reported to the correct number of significant figures, how many hours are there in exactly **24** days? _____

Question 3 A chemist needs **2.19g** of a liquid compound with a density of **0.921 g.cm⁻³**. What volume of the compound is required? **Show work.**

5 Points

cm³

Question 4 Give the correct **name** for the following **polyatomic ions**:

8 Points

- a. $\text{Cr}_2\text{O}_7^{2-}$ _____
 b. CN^- _____
 c. ClO_4^- _____
 d. CrO_4^{2-} _____

Question 5 How many **protons**, **neutrons** and **electrons** are there in $^{18}\text{O}^{2-}$?

6 Points

Protons Neutrons Electrons

Question 6 The following questions pertain to the periodic table given at the front of this exam:

8 Points

- a. The **symbol** for the **noble gas** in **period 4**? _____
 b. The **symbol** for the **group VB, period 5** element? _____
 c. The **symbol** for the **lightest alkali earth metal** is? _____
 d. **Group VIIA** are collectively known as: _____

Question 7 1. **Name** the compound with the formula $\text{Al}_2(\text{SO}_3)_3$? _____

8 Points

2. **Name** the compound with the formula $\text{Cu}(\text{NO}_3)_2$? _____
 3. What is the **formula** for **magnesium nitride**? _____
 4. What is the **formula** for **iron(II) hydroxide**? _____

Question 8
5 Points

A certain element consists of two stable isotopes:

	Exact Mass (amu)	Abundance (%)
#1	112.9043	4.28
#2	114.9041	95.72

What is the average atomic mass of this element? Give answer to 4 decimal places

Show Work

amu

Question 9
6 Points

How many **MOLES** of chlorine are present in 4.05 grams of carbon tetrachloride?

Show Work

.....

moles

Question 10
5 Points

How many **GRAMS** of I^- are present in 2.03 moles of copper(II) iodide?

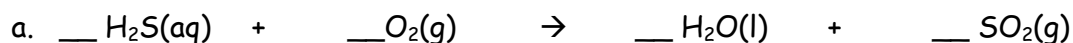
Show Work

.....

grams

Question 11
9 Points

Balance the following chemical equations using the **smallest possible integer coefficients**.

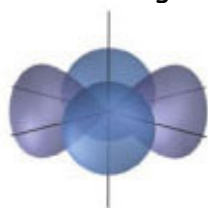


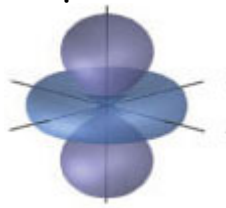
b. Write a balanced equation for the **complete oxidation** reaction that occurs when **ethane (C_2H_6)** burns in air.

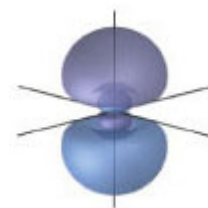
c. When **sulfur dioxide** reacts with **oxygen**, **sulfur trioxide** is formed.

Question 12
6 Points

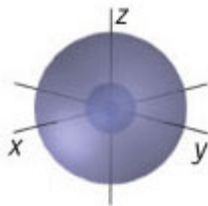
Label the following orbital drawings as **s**, **p**, **d** or **f**.







Question 13
4 Points



The orbital depicted on the left is not:


(Circle those that apply)

2p

1s

3s

Question 14
10 Points

1. Write the **complete** electronic configuration for **phosphorus**? _____
2. Write the **noble gas** configuration for **vanadium, (V)**? _____
3. The **element** with an **electron configuration** of $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^5$ _____
4. **Se**, $[Ar]4s^2 3d^{10} 4p^4$, has how many **valence electrons**? _____
5. The element in period **4** that has the Lewis diagram,  _____

Question 15
4 Points

Using only the periodic table arrange the following elements in order of increasing atomic radius: Mg, O, Na, K

Smallest

Largest

Question 16
4 Points

Using only the periodic table **arrange** the following elements in order of **increasing electronegativity**: Ga, N, Al, P

Least

Largest

Exam I Score