IA H											VIIIA He 2						
1.01	IIIA IVA VA											VIA	VIIIA	4.00			
Li	Be	Ř										В	C	N	0	F	Ne
3	4											5	6	7	8	9	10
6.94	9.01	,										10.81	12.01	14.01	16.00	19.00	20.18
Na	Mg											AI	Si	P	S	CI	Ar
11	12	Manager 1										13	14	15	16	17	18
22.99	24.31	IIIB	IVB	VB	VIB	VIIB	VIIIB	VIIIB	VIIIB	IB.	IIB.	26.98	28.09	30.97	32.07	35.45	39.95
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
39.10	40.08	44.96	47.88	50.94	52.00	54.94	55.85	58.93	58.69	63.55	65.39	69.72	72.61	74.92	78.96	79.90	83.80
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	- In	Sn	Sb	Te		Xe
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
85.47	87.62	88.91	91.22	92.91	95.94	(97.9)	101.07	102.91	106.42	107.87	112.41	114.82	118.71	121.76	127.60	126.90	131.29
Cs	Ba	La	Hf	Ta	W	Re	Os	lr	Pt	Au	Hg	TI	Pb	Bi	Po	At	Rn
55	56	57	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
132.91	137.33	138.91	178.49	180.95	183.85	186.21	190.2	192.22	195.08	197.97	200.59	204.38	207.2	208.98	(209)	(210)	(222)
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Uub	Uut	Uuq	Uup			
87	88	89	104	105	106	107	108	109	110	111	112	113	114	115			
223.02	226.03	227.03	(261)	(262)	263)	(262)	(265)	(266)	(271)	(272)	(285)	(284)	(289)	(288)]		

Ce

58

Th

Pr

59

140.12 140.91

Nd

60

144.24

U

92

232.04 231.04 238.03 237.05

Pm

61

(145)

93

Sm

62

150.36

Eu

63

152.97

Am

(240) 243.06

Gd

64

157.25

Cm

96

(247)

Tb

65

158.93

Bk

97

(248)

Dy

66

162.50

98

Ηо

67

164.93

(251) 252.08 257.10

Er

68

167.26

Fm

100

Υb

70

173.04

No

102

259.10 262.11

Lu

71

174.97

Lr

103

Tm

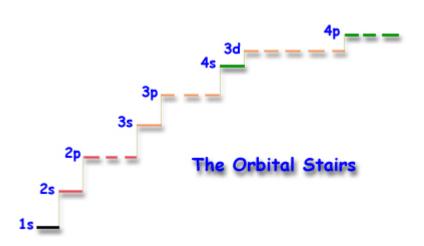
69

168.93

Μd

101

(257)



			5							
SID		Last	First							
Question 1 6 Points	How many signifi a. 57.44 b. 0.065	cant figures are there in 4 2	n each of the following nu c. 3.40×10 ³							
Question 2 6 Points	 a. When 36.456 is added to 74.2, the result should be reported to how many decimal places? 									
	b. The number 26.71560 rounded to 4 significant figures is: 25.72									
	 c. Reported to the correct number of significant figures, how many hours are there in exactly 24 days? 576 Both numbers are exact. 									
Question 3 5 Points	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.									
	2.19 g 1	$\frac{\text{cm}^3}{0.921 \text{ g}} = 2.38 \text{ cm}^3$		2						
				2.38 cm ³						
Question 4 8 Points	Give the correct	name for the following p	polyatomic ions:							
	a. Cr₂O₇²⁻	Dichromate								
	b. CN ⁻	Cyanide								
	c. ClO ₄	c. CIO ₄ - Perchlorate								
	d. CrO 4 ²⁻	Chromate								
Question 5	How many protons, neutrons and electrons are there in $^{18}\text{O}^{2-}$?									
6 Points	8 Prote	ons	10 Neutrons	10 Electrons						
Question 6	The following questions pertain to the periodic table given at the front of this exam:									
8 Points	a. The sy	mbol for the noble gas	in period 4?	Kr						
	b. The sy	Nb								
	c. The sy	mbol for the lightest al	kali earth metal is?	Be						
	d. Group	VIIA are collective kno	wn as:	Halides						
Question 7	1. Name the co	ompound with the formu	la Al ₂ (SO ₃) ₃ ? Aluminum	sulfite						
8 Points	2. Name the co	ompound with the formu	la Cu(NO3)2? Copper(II	Copper(II) nitrate						
	3. What is the	formula for magnesium	nitride? Mg ₃ N ₂	Mg_3N_2						
	4. What is the	formula for iron(II) hy	droxide? Fe(OH) ₂							

Question 8 5 Points

A certain element consists of two stable isotopes:

Exact Mass (amu) Abundance (%) #1 112.9043 4.28 95 72 #2 114.9041

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

112.9043(0.0428) + 114.9041(0.9572)

114,8185 amu

Question 9 6 Points

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

 CCl_4 : C + 4(Cl) = 12.01 + 4(35.45) = 153.81q

 $\frac{4.05 \ g}{153.81 \ a} = 0.0263 \ mol$ $\frac{0.0263 \ mol}{1 \ CCl_4} = 0.105 \ mol$

0.105 moles

Question 10 5 Points

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

Show Work

$$\frac{2.03 \text{ mol } CuI_2}{1 \text{ } CuCl_2} = 4.06 \text{ mol } I^- \qquad \frac{4.06 \text{ mol } I^-}{1 \text{ mol}} = 515 \text{ g}$$

$$\frac{4.06 \text{ mol } I^{-} | 126.9 \text{ g}}{1 \text{ mol}} = 515 \text{ g}$$

515 grams

Question 11 Balance the following chemical equations using the smallest possible integer coefficients.

9 Points

$$\rightarrow$$
 2 H₂O(I)

b. Write a balanced equation for the complete oxidation reaction that occurs when ethane (C2H6) burns in air.

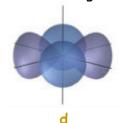
$$2 C_2H_6 + 7 O_2 = 4 CO_2 + 6 H_2O$$

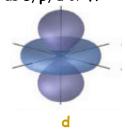
c. When sulfur dioxide reacts with oxygen, sulfur trioxide is formed.

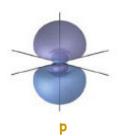
$$2 5O_2 + O_2 = 2 5O_3$$

Question 12 6 Points

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







Question 13	Z	The orbital dep	oicted on the le								
4 Points	x	2р	1s	3s	(Circle those that apply)						
Question 14	1. Write the complete electronic configuration for phosphorus? 1s ² 2s ² 2p ⁶ 3s ² 3p ³										
TO POINTS	2. Write the noble gas configuration for vanadium , (V)? [Ar]4s ² 3d ³										
	3. The element with an electron configuration of 1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ² 3d ⁵ Mn										
	4. Se , [Ar]4s²3d¹	6									
	5. The element in	period 4 that ha	s the Lewis diag	gram, • <mark>X:</mark>	Ge						
Question 15 4 Points	•	odic table arrange O, Na, K	the following e	elements in (order of increasing atomic						
	0	Mg	N	<u>a</u>	K						
	Smallest				Largest						
Question 16 4 Points	Using only the period electronegativity:	odic table arrange Ga, N, Al, P	_	elements in	order of i ncreasing						
	Ga	Al	Р		N						
	Least			<u> </u>	Largest						
	E×am :	I Score									