

Dr. Zellmer
Time: 7 PM Sun.
30 min

Chemistry 1210
Autumn Semester 2022
Quiz II

All Sections
September 11, 2022

Name _____ Rec. TA/time _____

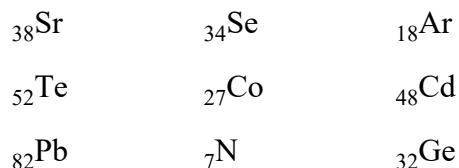
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1. (3 pts) An element has two naturally occurring isotopes, ^{83}X and ^{85}X , with atomic masses of 82.9118 amu and 84.9092 amu, respectively. The natural abundances of ^{83}X and ^{85}X are 63.15% and 36.85%, respectively. Calculate the atomic weight of this element.

Not on actual quiz. Just for practice.

2. (5 pts) Copper (atomic weight 63.5460) has two naturally-occurring isotopes, the predominant one being ^{63}Cu with an isotopic weight of 62.9298 and an abundance of 69.09%. What is the isotopic weight of the other isotope?

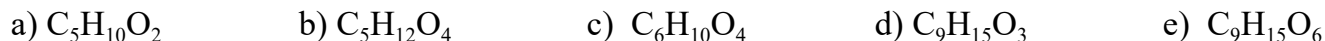
3. (4 pts) Examine the following group of elements.



The number of **representative (main-group) metals** is(are):

The number of **metalloids** (semimetals) is(are):

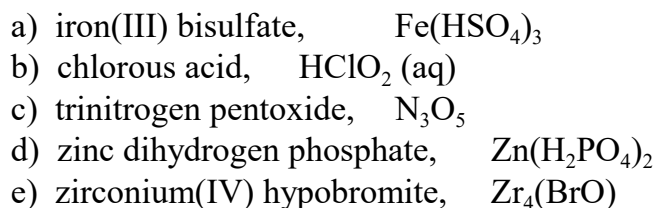
4. (2 pts) Which of the following formulas are possible molecular formulas for the empirical formula $\text{C}_3\text{H}_5\text{O}_2$?



5. (3 pts) Fill in the blanks in the table below for the isotopes indicated.

Symbol	number of protons	number of neutrons	number of electrons	atomic number	mass number
$^{138}_{56}\text{Ba}^{2+}$					138

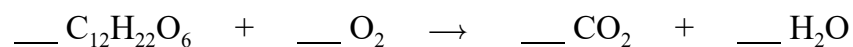
6. (5 pts) Which of the following pairs of names and formulas is **INCORRECT**?



7. What are the formulas of two compounds, one composed of chromium and nitrite and another composed of chromium and selenate, if the charge on the Cr is the same as in CrN. (Assume the charge on Cr is the same in all cases.)

Not on actual quiz. Just for practice.

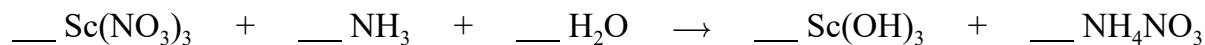
8. (6 pts) Balance the following equation. What is the sum of the coefficients of the **REACTANTS**? (If present, don't forget the coefficients of 1.)



9. (5 pts) Balance the following equation. What is the sum of the coefficients of the **REACTANTS AND PRODUCTS** in the balanced equation? (If present, don't forget the coefficients of 1.)



10. (5 pts) Balance the following equation and choose the answer which is the sum of the coefficients of the **REACTANTS**. (If present, don't forget the coefficients of 1.)



	IA	IIA	IIIB	IVB	VB	VIB	VIIB	VIIIB			IB	IIB	IIIA	IVA	VA	VIA	VIIA	VIIIA
1	1.008 H 1																	4.003 He 2
2	6.941 Li 3	9.012 Be 4											10.811 B 5	12.011 C 6	14.007 N 7	15.999 O 8	18.998 F 9	20.179 Ne 10
3	22.990 Na 11	24.305 Mg 12											26.98 Al 13	28.09 Si 14	30.974 P 15	32.06 S 16	35.453 Cl 17	39.948 Ar 18
4	39.098 K 19	40.08 Ca 20	44.96 Sc 21	47.88 Ti 22	50.94 V 23	52.00 Cr 24	54.94 Mn 25	55.85 Fe 26	58.93 Co 27	58.69 Ni 28	63.546 Cu 29	65.38 Zn 30	69.72 Ga 31	72.59 Ge 32	74.92 As 33	78.96 Se 34	79.904 Br 35	83.80 Kr 36
5	85.47 Rb 37	87.62 Sr 38	88.91 Y 39	81.22 Zr 40	92.91 Nb 41	95.94 Mo 42	98 Tc 43	101.07 Ru 44	102.91 Rh 45	106.42 Pd 46	107.87 Ag 47	112.41 Cd 48	114.82 In 49	118.69 Sn 50	121.75 Sb 51	127.60 Te 52	126.90 I 53	131.39 Xe 54
6	132.91 Cs 55	137.33 Ba 56	138.91 La 57	178.39 Hf 72	180.95 Ta 73	183.85 W 74	186.21 Re 75	190.23 Os 76	192.22 Ir 77	195.08 Pt 78	196.97 Au 79	200.59 Hg 80	204.38 Tl 81	207.2 Pb 82	208.98 Bi 83	209 Po 84	210 At 85	222 Rn 86
7	223 Fr 87	226.03 Ra 88	227.03 Ac 89	261 Rf 104	262 Ha 105	263 Sg 106	262 Ns 107	265 Hs 108	266 Mt 109	269 Lr 110	272 Uub 111	277 Uut 112						

Lanthanide Series	140.12 Ce 58	140.91 Pr 59	144.24 Nd 60	145 Pm 61	150.36 Sm 62	151.96 Eu 63	157.25 Gd 64	158.93 Tb 65	162.50 Dy 66	164.93 Ho 67	167.26 Er 68	168.93 Tm 69	173.04 Yb 70	173.04 Lu 71
Actinide Series	232.04 Th 90	231.04 Pa 91	238.03 U 92	237.05 Np 93	Pu 94	Am 95	Cm 96	Bk 97	Cf 98	Es 99	Fm 100	Md 101	No 102	Lr 103

A PERIODIC CHART OF THE ELEMENTS
(Based on ¹²C)