

CHEM 1110.20787
Test 1, Form A
Spring 2013

Part1 – Short Answer (35 pts)

1. (15 pts) Complete the table below

Element Name	Symbol	Atomic Number	Number of Neutrons	Mass Number
	Cu			68
Phosphorus			17	
		13	15	
Neon				22
			4	7

2. (10 pts) In the periodic table below, label
- the Alkali Metals (P)**
- ,
- the Chalcogens (Q)**
- ,
- the Noble Gases (R)**
- ,
- the Halogens (S)**
- , and
- the Alkaline Earth Metals (T)**
- using the letter given in parenthesis.

IA																		VIIIA																												
1	H 1.008																	2	He 4.00																											
2	Li 6.94	3	Be 9.01																	4	B 10.81	5	C 12.01	6	N 14.01	7	O 16.00	8	F 19.00	9	Ne 20.18															
3	Na 22.99	11	Mg 24.31	12																	13	Al 26.98	14	Si 28.09	15	P 30.97	16	S 32.06	17	Cl 35.45	18	Ar 39.95														
4	K 39.10	19	Ca 40.08	20	Sc 44.96	21	Ti 47.90	22	V 50.94	23	Cr 52.00	24	Mn 54.94	25	Fe 55.85	26	Co 58.93	27	Ni 58.71	28	Cu 63.55	29	Zn 65.37	30	Ga 69.72	31	Ge 72.59	32	As 74.92	33	Se 78.96	34	Br 79.90	35	Kr 83.80											
5	Rb 85.47	37	Sr 87.62	38	Y 88.91	39	Zr 91.22	40	Nb 92.91	41	Mo 95.94	42	Tc [98]	43	Ru 101.1	44	Rh 102.9	45	Pd 106.4	46	Ag 107.9	47	Cd 112.40	48	In 114.8	49	Sn 118.7	50	Sb 121.8	51	Te 127.60	52	I 126.90	53	Xe 131.30											
6	Cs 132.9	55	Ba 137.3	56	Lu 175	71	Hf 178.5	72	Ta 181	73	W 183.9	74	Re 186.2	75	Os 190.2	76	Ir 192.2	77	Pt 195.1	78	Au 197	79	Hg 200.59	80	Tl 204.4	81	Pb 207.2	82	Bi 209	83	Po [209]	84	At [210]	85	Rn [222]											
7	Fr [223]	87	Ra [226]	88	Lr [262]	103	Rf [267]	104	Db [268]	105	Sg [271]	106	Bh [272]	107	Hs [270]	108	Mt [276]	109	Ds [281]	110	Rg [280]	111	Uub [285]	112	Uut [284]	113	Uuq [289]	114	Uup [288]	115	Uuh [293]	116		117	Uuo [294]											
																			57	La 138.9	58	Ce 140.1	59	Pr 140.9	60	Nd 144.2	61	Pm [145]	62	Sm 150.4	63	Eu 152	64	Gd 157.3	65	Tb 158.9	66	Dy 162.5	67	Ho 164.93	68	Er 167.3	69	Tm 168.9	70	Yb 173
																			89	Ac [227]	90	Th 232	91	Pa [231]	92	U 238	93	Np [237]	94	Pu [244]	95	Am [243]	96	Cm [247]	97	Bk [247]	98	Cf [251]	99	Es [252]	100	Fm [257]	101	Md [258]	102	No [259]

3. (6 pts) Write the measurements in scientific notation with correct significant figures.

a. 1005 m _____

b. 0.00560 g _____

c. 230.0 °C _____

4. (4 pts) What is the most massive part of the atom? _____

Part 2 – Multiple Choice (20 pts): Circle the best answer.

1. Elements with similar properties on the periodic table are organized into _____.

- a. Pods
- b. Groups
- c. Rows
- d. Dimensions

2. A temperature of 303K is _____ degrees Celsius

- a. 303
- b. 576
- c. 30
- d. 0

3. Which is not a physical property?

- a. Boiling
- b. Freezing
- c. Filtering
- d. Burning

4. Which experiment determined that the nucleus is small and positively charged?

- a. Millikan's Oil Drop
- b. Rutherford's Gold Foil
- c. Thomson's Cathode Ray Tube
- d. Rontgen's X-ray

5. Which of the following series of elemental symbols lists a metal, a nonmetal, and a metalloid, respectively?

- a. Na, P, Cl
- b. Ca, Cu, Si
- c. K, C, As
- d. Mg, O, S

Part 3 – Calculations (45 pts): Clearly and neatly show all work for full credit.

1. (10 pts) An unknown element has been discovered on the Planet of the Apes. Given the following information, what is the average atomic mass of this new element?

Isotope Mass	Percent Abundance
78.569 amu	45.35%
79.609 amu	33.98%
82.569 amu	20.67%

