

1. Indicate whether each of the following statements is true (T) or false (F):

- a) The ratio of a neutron's mass to an electron's mass is 1840. T
- b) The ratio of a neutron's mass to a proton's mass is 1. T  $\frac{\text{mass neutron}}{\text{mass proton}} = 1$
- c) The mass of an electron is 1840 times less than that of a proton. T
- d) The nucleus of a neutral atom contains the same number of protons and electrons. F (electrons are not in nucleus)
- e) The number of protons in an atom is always equal to the number of neutrons. F
- f) A neutron helps to hold the nucleus together. T (diff isotopes have diff #s neutron)
- g) The volume of the nucleus is very large relative to the volume of the atom. F
- h) Electrons travel within well defined energy levels inside the nucleus. F (e's not in nucleus)
- i) In the periodic table below, the elements inside the rectangle are Alkali Metals. F

not an Alkali Metal →

1	H																	2	He																
3	Li	4	Be											10	Ne																				
11	Na	12	Mg											18	Ar																				
19	K	20	Ca	21	Sc	22	Ti	23	V	24	Cr	25	Mn	26	Fe	27	Co	28	Ni	29	Cu	30	Zn	31	Ga	32	Ge	33	As	34	Se	35	Br	36	Kr
37	Rb	38	Sr	39	Y	40	Zr	41	Nb	42	Mo	43	Tc	44	Ru	45	Rh	46	Pd	47	Ag	48	Cd	49	In	50	Sn	51	Sb	52	Te	53	I	54	Xe
55	Cs	56	Ba											86	Rn																				
87	Fr	88	Ra											118	Og																				

\*Lanthanide series  
 \*\*Actinide series

- j) Alkali metals react readily with oxygen and halogens. T
- k) The chemical properties of alkali metals are different from those of alkaline earth metals. T
- l) Nonmetals are poor conductors of electricity. T

2. Indicate the charge (positive, negative, or neutral) of each of the following:

- a) proton +
- b) neutron neutral
- c) electron -

3. Circle the letters in front of the characteristics below that apply to metals:

- a) shiny
- c) malleable
- e) all solid at room temperature Hg is not solid
- b) ductile
- d) conductors of electricity
- f) found to the right of the staircase on the periodic table.

4. Complete the following table:

	electron configuration	family name	period number
F	$2e7e$ $2+7=9$	Halogen	2
P	$2e8e5e = 15$	Nitrogen	3
	$2\bar{e} 8\bar{e} 8\bar{e}   \bar{e}$	Alkali Metal	4
	$2\bar{e} 8\bar{e} 8\bar{e}$	Noble Gas	3

atomic number = 9

K = 19  
Ar = 18



As = 33

5. a) Referring to the periodic table, identify which of the following elements are isotopes.

Element	Number of protons	Number of neutrons	Number of electrons
A	33	41	36
B	32	40	28
C	33	42	25
D	34	43	36
E	33	43	33
F	35	43	36

Answer: A, C, E

b) Classify the six elements listed above as either neutral atoms, anions, or cations. Write the appropriate letters in the spaces provided.

Neutral atoms	Anions	Cations
E	A, D, F negative	B, C positive

#p<sup>+</sup> = #e<sup>-</sup>    more e<sup>-</sup> than p<sup>+</sup>    more p<sup>+</sup> than e<sup>-</sup>