Print Name_____ Lab Section_____ (A,B,C, or D)

Brooklyn College Chemistry 1.2 Quiz 2 Spring 2009 Form A

IA	IIA	IIIB	IVB	VB	VIB	VIIB		VIIIB		IB	IIB	IIIA	IVA	VA	VIA	VIIA	0
1 H 1.008																	2 He 4.003
3 Li 6.941	4 Be 9.012											5 B 10.81	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
11 Na 22.99	12 Mg 24.31											13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.06	17 Cl 35.45	18 Ar 39.95
19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.90	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.70	29 Cu 63.55	30 Zn 65.38	31 Ga 69.72	32 Ge 72.59	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc (98)	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.3
55 Cs 132.9	56 Ba 137.3	57 * La 138.9	72 Hf 178.5	73 Ta 180.9	74 W 183.9	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.6	81 Tl 204.4	82 Pb 207.2	83 Bi 209.0	84 Po (209)	85 At (210)	86 Rn (222)
87 Fr (223)	88 Ra (226.0)	89 ** Ac (227)	104 Rf	105 Ha	106 Unh	107 Uns	108	109 Une									

* 58 Ce 140.1	59 Pr 140.9	60 Nd 144.2	61 Pm (145)	62 Sm 150.4	63 Eu 152.0	64 Gd 157.3	65 Tb 158.9	66 Dy 162.5	67 Ho 164.9	68 Er 167.3	69 Tm 168.9	70 Yb 173.0	71 Lu 175.0
** 90 Th 232.0	91 Pa (231)	92 U 238.0	93 Np (244)	94 Pu (242)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (252)	100 Fm (257)	101 Md (258)	102 No (259)	103 Lr (260)

Consider the atoms in Group 14 (IVA) from top to bottom : **a) C b) Si c) Ge d) Sn e) Pb**

1) Which has the largest radius?

2) Which has the greatest 1st ionization energy?

3) Two are metalloids are Si and _____.

4) Which has the greatest electronegativity?

5) Which is the most active metal?

6) How many valence electrons does each have? **a) 1 b) 2 c) 3 d) 4 e) 5**

Considering these third period atoms: **a) Na b) Mg c) Al d) P e) Cl**

7) Which has the smallest radius?

8) Which has the smallest first ionization energy?

9) Which is the most active metal?

10) Which has the smallest electronegativity?

11) Which is the most active non-metal

12) Which of these isoelectronic ions is the largest? (A) Ca^{2+} (B) K^{+} (C) Sc^{3+} (D) S^{2-}

13) Which pair is given in the order of increasing size? A) Cl^{-} , Cl B) Fe^{3+}, Fe^{2+} C) Sr, Ca D) K , K^{+}

14) In which reaction is the energy term referred to as the first ionization energy?
(A) NaC*l(s)* + energy → Na^{+} *(g)* + Cl^{-} *(g)* (B) Na*(g)* + energy → Na^{+} + *e* –
(C) C*l(g)* + *e*→ Cl^{-} *(g)* + energy (D) Cl^{-} *(g)* + H^{+} *(g)* → HC*l(g)* + energy
(E) Cl_2*(g)* + energy → 2Cl*(g)*

15) Which reaction in question 14 is the energy term referred to as electron affinity? (Same choices as question 14) ___

16) What is the correct electron configuration of the ion Fe^{2+}?
(A) [Ar] $3d^4 4s^2$ (B) [Ar] $3d^6 4s^2$ (C) [Ar] $3d^6$ (D) [Ar]

17) Which of the following compounds has the greatest lattice enthalpy?
(A) NaCl (B) MgO (C) NaBr (D) MgS (E) NaI

18) The electron configuration of S^{2-} is:
a) $1s^2 2s^2 2p^6 3s^2 3p^5$ b) $1s^2 2s^2 2p^6 3s^2 3p^6$ c) $1s^2 2s^2 2p^6 3d^{10}$ d) $1s^2 2s^2 2p^6$ e) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10}$

19) Which of the following oxides is most acidic? a) Cl_2O_7 b) Al_2O_3 c) Ga_2O_3 d) CaO

20) Which of the following bonds is most polar (has the greatest dipole moment)? a) H-F b) H-Cl c) H-H d) F-F e) H-I

21) Which of the following pairs of atoms are **least** likely to form an ionic compound?
a) Ni, O b) Na, F c) Cu, Cl d) Li, Mg e) Li, F