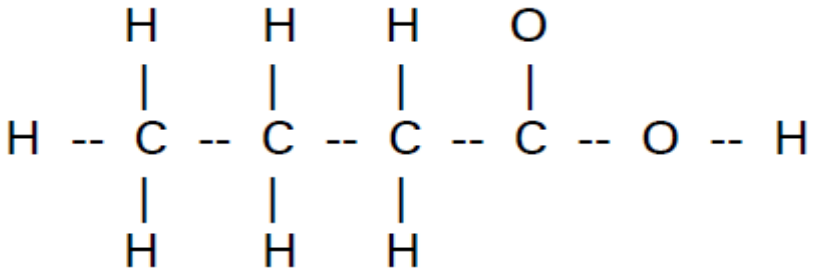
Name: ..... **ID……**

Periodic Table

1 H																	2 He
3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	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	57-71 *	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra	89-103 #	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Uut	114 Uuq	115 Uup	116 Uuh	117 Uus	118 Uuo

57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

1. **(5 points)** Complete the Lewis structure for the simple organic molecule whose skeletal structure is shown below. Add multiple bonds and lone pairs as needed BUT NO ADDITIONAL ATOMS. Then survey the sigma, pi and lone pairs. Place the number of each in the blanks supplied.



In this structure there are:

a. _____ sigma bonds

b. _____ pi bonds and

c. ____ lone pairs.

d. Upload the Complete the Lewis structure here:

(insert figure here)

2. (**5 points)** Based on the skeletal structure please answer the following questions.

F --- Xe --- F

How many valence electrons are needed in the Lewis diagram of the inorganic compound whose skeletal structure is shown above?

_____ e⁻'s

b. Now complete the Lewis structure here:

(insert figure here)

c. With the help of the Lewis structure please answer the following questions:

Regions _____ Regions with bonds _____

Shape _____

3. **(5 points)** If the electronegativity of chlorine is 3.5 and that for S is 2.5, what kind of bond forms between Cl and S? Use a Δ e. n. calculation to justify your answer. Write yes/No inside the (…..) area.

   a. ionic (...) polar covalent (.....) nonpolar covalent (....)

   b. overall, this molecule is: polar (.....) nonpolar (.....)

   Explain why: _____

4 **(3 points)** Draw a picture of an CCl_4 molecule showing bond angles, hybridization, all bonding orbitals and lone pairs.

(insert figure here)

5. (**2 points)** How do you identify covalent bonds in any compound? Show examples.