CHM151 Quiz 10 25 Pts Fall 2010 Name: _____

1. (3 Pts) On the back of the paper, explain ionic bonding, covalent bonding and metallic bonding.
2. (5 Pts) Calculate ΔH for the following reaction (you will need to balance the equation and write Lewis structures each element or compound)

$$\_\_\_\_CH_3CH_2CH_2CH_2OH + \_\_\_\_O_2 \rightarrow \_\_\_\_CO_2 + \_\_\_\_H_2O$$

(Bond energies in kJ/mol: H-H 432, C-C 347, C-H 413, C-O 358, C=O 745, $O_2$ 498, O-H 467)

3. (12 Pts) Fill out the following table. Be sure supply both the electron pair geometry name and the molecular geometry name for each.

| | | | |
|---|---|---|---|
| a. $BrO_3^-$<br>number of valence e⁻'s _____<br>Lewis structure:<br><br>Electron pair geometry name: | VSEPR Structure (3-D):<br><br>VSEPR (molecular geometry) Name: | b. CO<br>number of valence e⁻'s____<br><br>Electron pair geometry name: | VSEPR Structure (3-D):<br><br>VSEPR (molecular geometry) Name: |
| c. $SF_4$<br>number of valence e⁻'s _____<br>Lewis structure:<br><br>Electron pair geometry name: | VSEPR Structure (3-D):<br><br>VSEPR (molecular geometry) Name: | d. $Cl_3PO$<br>number of valence e⁻'s _____<br>Lewis structure:<br><br>Electron pair geometry name: | VSEPR Structure (3-D):<br><br>VSEPR (molecular geometry) Name: |
| e. XeF4<br>number of valence e⁻'s _____<br>Lewis structure:<br><br>Electron pair geometry name: | VSEPR Structure (3-D):<br><br>VSEPR (molecular geometry) Name: | f. $C_3H_6$<br>number of valence e⁻'s _____<br>Lewis structure:<br><br>Electron pair geometry name: | VSEPR Structure(3-D):<br><br>VSEPR (molecular geometry) Name (for each C): |

4. (3Pts) Draw all of the resonance structures for the nitrate ion, $NO_3^-$.