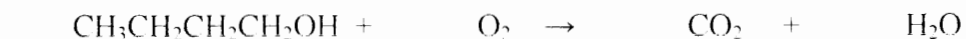


- (3 Pts) On the back of the paper, explain ionic bonding, covalent bonding and metallic bonding.
- (5 Pts) Calculate ΔH for the following reaction: (you will need to balance the equation and write Lewis structures each element or compound)



(Bond energies in kJ/mol: H-H 432, C-C 347, C-H 413, C-O 358, C=O 745, O₂ 498, O-H 467)

- (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^- number of valence e ⁻ 's _____ Lewis structure: Electron pair geometry name:	VSEPR Structure (3-D): VSEPR (molecular geometry) Name:	b. CO number of valence e ⁻ 's _____ Electron pair geometry name:	VSEPR Structure (3-D): VSEPR (molecular geometry) Name:
c. SF_4 number of valence e ⁻ 's _____ Lewis structure: Electron pair geometry name:	VSEPR Structure (3-D): VSEPR (molecular geometry) Name:	d. Cl_3PO number of valence e ⁻ 's _____ Lewis structure: Electron pair geometry name:	VSEPR Structure (3-D): VSEPR (molecular geometry) Name:
e. XeF_4 number of valence e ⁻ 's _____ Lewis structure: Electron pair geometry name:	VSEPR Structure (3-D): VSEPR (molecular geometry) Name:	f. C_3H_6 number of valence e ⁻ 's _____ Lewis structure: Electron pair geometry name:	VSEPR Structure(3-D): VSEPR (molecular geometry) Name (for each C):

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