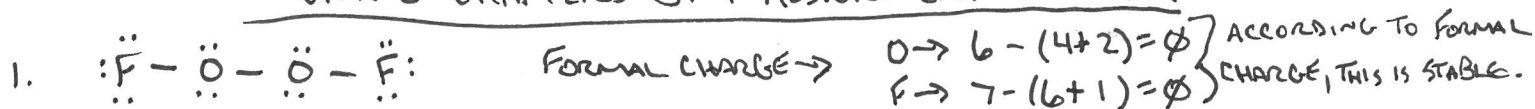
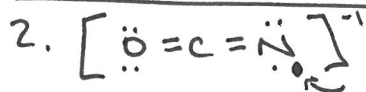


UNIT 2- CHAPTERS 8+9 ASSIGNMENT #2 - KEY



OXIDATION STATES:

$\text{O}^{+2}, \text{F}^{-1} \rightarrow$ Compound STATED AS STRONG OXIDIZER, SO OXIDATION STATE IS BETTER INDICATOR



$\text{O} \rightarrow 6 - (4+2) = 0$

$\text{C} \rightarrow 4 - (0+4) = 0$

$\text{N} \rightarrow 5 - (4+2) = -1$



$\text{C} \rightarrow 4 - (2+3) = -1$

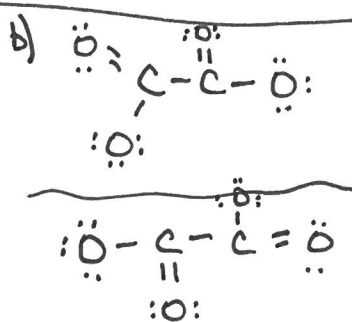
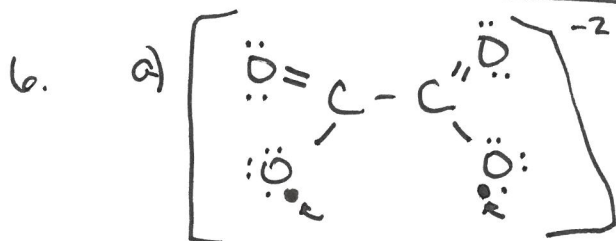
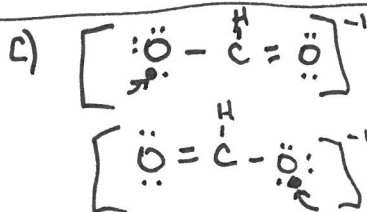
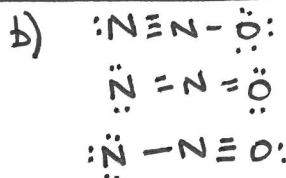
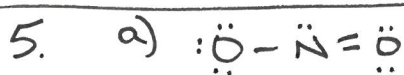
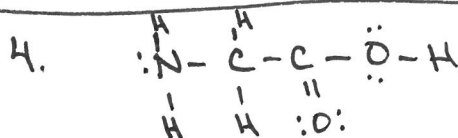
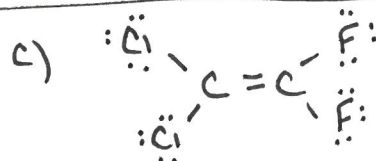
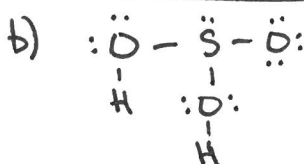
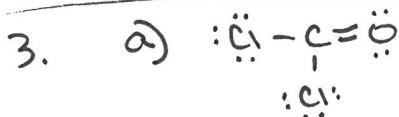
$\text{N} \rightarrow 5 - (0+4) = +1$

$\text{O} \rightarrow 6 - (6+1) = -1$

* OCN^{-1} HAS TWO DOUBLE BONDS, MAKING IT STRONGER/MORE STABLE

* CNO^{-1} ONLY HAS ONE TRIPLE BOND, MAKING IT MORE FRAGILE

(FORMAL CHARGE IS MORE HELPFUL)



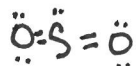
c) NO-CARBON FORMS CATION 1%



$\text{O}_1 \rightarrow 6 - (4+2) = 0$

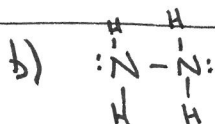
$\text{S} \rightarrow 6 - (2+3) = +1$

$\text{O}_2 \rightarrow 6 - (6+1) = -1$



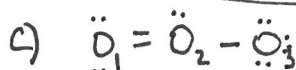
$\text{O}_{1+2} \rightarrow 6 - (4+2) = 0$

$\text{S} \rightarrow 6 - (2+4) = 0$



$\text{N} \rightarrow 5 - (2+3) = 0$

$\text{H} \rightarrow 1 - (0+1) = 0$

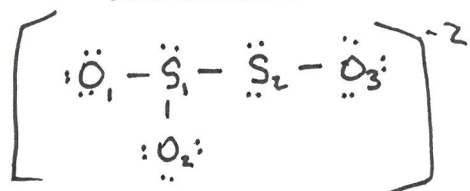


$\text{O}_1 \rightarrow 6 - (4+2) = 0$

$\text{O}_2 \rightarrow 6 - (2+3) = +1$

$\text{O}_3 \rightarrow 6 - (6+1) = -1$

8.

STRUCTURE 1

$$S_1 \rightarrow 6 - (2 + 3) = +1$$

$$S_2 \rightarrow 6 - (4 + 2) = 0$$

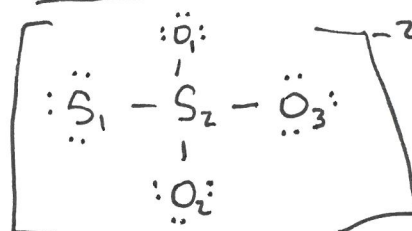
$$O_1 \rightarrow 6 - (6 + 1) = -1$$

$$O_2 \rightarrow 6 - (6 + 1) = -1$$

$$O_3 \rightarrow 6 - (6 + 1) = -1$$

$$-2$$

$\therefore$ STRUCTURE 1 IS PREFERRED
 BASED UPON FORMAL CHARGE, FOR THE
 SULFUR ATOMS ARE CLOSER TO/ EQUAL TO
 ZERO (MORE STABLE), WHERE IN STRUCTURE
 2 THEY SWITCH BETWEEN +2 + -1.

STRUCTURE 2

$$S_1 \rightarrow 6 - (6 + 1) = -1$$

$$S_2 \rightarrow 6 - (0 + 4) = +2$$

$$O_{1-3} \rightarrow 6 - (6 + 1) = -1 \times 3 = -3$$

$$-2$$