

OXIDATION NUMBERS

1. The oxidation number for oxygen is usually -2.

Exceptions: O₂ and peroxides

(C--O bond ==> ex. H₂O₂, Na₂O₂, and BaO₂ and etc.)

2. The oxidation number of hydrogen is usually +1.

Exceptions: H₂ and hydrides Ex. NaH, BaH₂, and etc.

3. Oxidation numbers of an atom or group of atoms is equal to the charge on the species:

a. The oxidation number on free elements is zero.

Ex. Hg, Fe, Cr, Mn...etc.

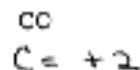
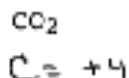
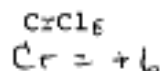
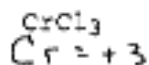
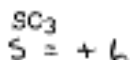
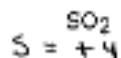
b. The oxidation number for elements when combined with themselves is zero

Ex. H₂, S₈, Br₂,...etc.)

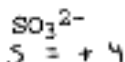
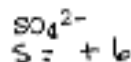
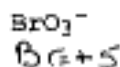
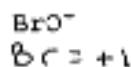
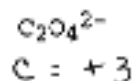
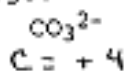
c. The oxidation number of a monatomic ion is equal to its charge.

<u>ION</u>	<u>OXIDATION NUMBER</u>
K ¹⁺	+1
Ca ²⁺	+2
Fe ³⁺	+3
S ²⁻	-2

d. The sum of the oxidation numbers of the elements in a compound is equal to zero



e. The sum of the oxidation numbers of the elements in a polyatomic ion is equal to its net charge.



e. The sum of the oxidation numbers of the elements in a polyatomic ion is equal to its net charge.

