

Name: _____

Period: _____

Seat#: _____

Directions: Use the rules for Assigning Oxidation numbers to determine the oxidation number assigned to each element in each of the given formulas. The rules are at the bottom of the page.

Q #	Formula	Oxidation #'s	
1)	Cl ₂	Cl	
2)	Cl ⁻	Cl	
3)	Na	Na	
4)	Na ⁺	Na	
5)	KCl	K	Cl
6)	H ₂ S	H	S
7)	CaO	Ca	O
8)	H ₂ O	H	O
9)	NO ₃ ⁻	N	O
10)	NO ₂	N	O
11)	Cr ₂ O ₇ ²⁻	Cr	O
12)	O ₂	O	
13)	NH ₃	N	H
14)	CaH ₂	Ca	H
15)	SO ₄ ²⁻	S	O

Q #	Formula	Oxidation #'s		
16)	Na ₂ O	Na	O	
17)	HNO ₃	H	N	O
18)	CaCl ₂	Ca	Cl	
19)	PO ₄ ³⁻	P	O	
20)	MnO ₂	Mn	O	
21)	K ₃ PO ₄	K	P	O
22)	Fe ₂ O ₃	Fe	O	
23)	KNO ₂	K	N	O
24)	N ₂	N		
25)	Al ³⁺	Al		
26)	H ₂ O ₂	H	O	
27)	H ₂ SO ₄	H	S	O
28)	NH ₄ Cl	N	H	Cl
29)	FeO	Fe	O	
30)	SiO ₂	Si	O	

Rules for Assigning Oxidation Numbers

- 1) The oxidation number of any uncombined element is 0.
- 2) The oxidation number of a monatomic ion equals the charge on the ion.
- 3) The more-electronegative element in a binary compound is assigned the number equal to the charge it would have if it were an ion.
- 4) The oxidation number of fluorine in a compound is always -1
- 5) Oxygen has an oxidation number of -2 unless it is combined with F, when it is +2, or it is in a peroxide, such as H₂O₂, when it is -1
- 6) The oxidation state of H in most of its compounds is +1 unless it is combined with a metal, in which case it is -1
- 7) In compounds, the elements of groups 1 and 2 as well as aluminum have oxidation numbers +1, +2 and +3 respectively.
- 8) The sum of the oxidation numbers of all atoms in a neutral compound is 0.
- 9) The sum of the oxidation numbers of all atoms in a polyatomic ion equals charge of the ion.