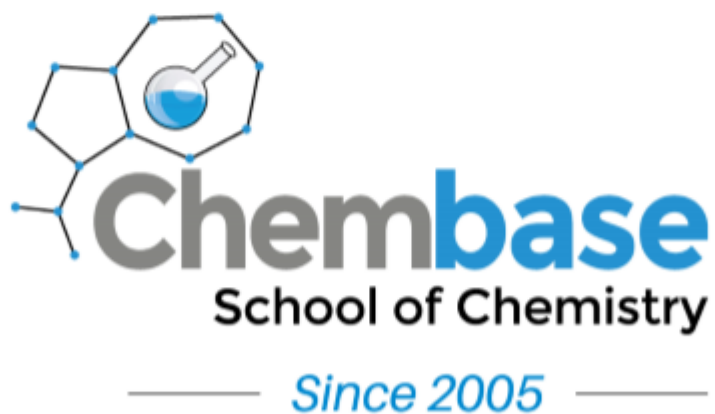


STUDY PACK : 1.E (i)

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Principles of Chemistry

Chemical Formulae



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1. What is meant by the term Valency?

Valency of an element is equal to the number of positive or negative charge acquired by the atom by losing or gaining electrons

2. Write down the Rules of writing a Chemical formula?

- a) Write down the symbols of the elements/ radicals given in the chemical name of the compound.
- b) Write down the valencies of each element or radical under the corresponding symbol.
- c) Cross them over as shown below

d) The valencies show the simplest combining ratio & may be cancelled down in order to simplify

e) If an element has more than one valency, the name of the compound will indicate the valency in capital roman numerals.

Eg: Copper (I) Oxide
Lead (IV) chloride

5. Explain why the valency of noble gasses is zero hence forming no compounds

Noble gases possess a completely filled outermost shell of electrons. Therefore it will not lose or gain electrons, hence the valency is zero forming no bonds.

6. Assign the valency for the following Elements & Radicals:

ELEMENTS			RADICALS		
	Symbol	Valency		Symbol	Valency
Hydrogen	H		Hydroxide	OH	
Carbon	C		Nitrite	NO ₂	
Nitrogen	N		Nitrate	NO ₃	
Oxygen	O		Sulfite	SO ₃	
Sodium	Na		Sulfate	SO ₄	
Magnesium	Mg		Ammonium	NH ₄	
Aluminium	Al		Carbonate	CO ₃	
Silicon	Si		Hydrogen-carbonate (bicarbonate)	HCO ₃	
Phosphorus	P		Hydrogen- Sulfite (bisulfite)	HSO ₃	
Sulfur	S		Hydrogen- Sulfate (bisulfate)	HSO ₄	
Chlorine	Cl		Phosphate	PO ₄	
Calcium	Ca		Manganate (VII)	MnO ₄	
Manganese	Mn		Dichromate (VI)	Cr ₂ O ₇	
Iron	Fe		Thiosulfate	S ₂ O ₃	
Cobalt	Co				
Copper	Cu				
Zinc	Zn				
Lead	Pb				
Mercury	Hg				
Silver	Ag				

7. Write the formulae of the following, by showing the valencies of each element & Crossing them over:

(I) Sodium Chloride

(XI) Aluminium Oxide

(II) Sodium Hydroxide

(XII) Aluminium Sulfate

(III) Sodium Sulfate

(XIII) Iron (II) Sulfate

(IV) Calcium Carbonate

(XIV) Copper (I) Oxide

(V) Magnesium Bromide

(XV) Lead (II) Nitrate

(VI) Ammonium Chloride

(XVI) Lead (II) Oxide

(VII) Copper (II) Sulfate

(XVII) Ammonium Carbonate

(VIII) Calcium Hydrogen Carbonate

(XVIII) Ammonium Sulfate

(IX) Calcium Oxide

(XIX) Hydrogen Sulfate (Sulfuric acid)

(X) Magnesium Sulfate

(XX) Hydrogen Nitrate (Nitric acid)