

## Chemistry

Viii

Ch-5

### The language of chemistry

#### BOOK WORK

#### CHOOSE THE CORRECT OPTION

1. Which of the following symbols is not derived from latin name of the element?  
→ Cr
2. Which of the following symbol is derived from latin name of the element?  
→ Ag
3. Which element the once appearing below is pentavalent?  
→  $\text{PCl}_5$
4. What is the valency of Mg in  $\text{Mg}_3\text{N}_2$  ?  
→ 2
5. What is the value of x in the given equation  
→ 2
6. Which of the following is not balanced chemical equation  
→  $2 \text{KClO}_3 \rightarrow \text{KCl} + 3\text{O}_2$

#### FILL IN THE BLANKS

1. Nitrogen is **trivalent** in  $\text{AlN}$  .
2. One sulphate radicle will take up **2** sodium radicles to form sodium sulphate.
3.  $2 \text{H}_2\text{O}_2 \rightarrow 2 \text{H}_2\text{O} + \text{O}_2$
4.  $\text{Na}_2\text{CO}_3 + 2\text{HCl} \rightarrow 2\text{NaCl} + \text{H}_2\text{O} + \text{CO}_2$
5.  $2 \text{NaHCO}_3 \rightarrow \text{Na}_2\text{CO}_3 + \text{H}_2\text{O} + \text{CO}_2$

### WRITE TRUE OR FALSE

1. Ozone is triatomic gas. **TRUE**
2. The atomicity of sulphur is 4. **FALSE**
3. One di positive radicles will require only one di negative radicle to from a compound. **TRUE**
4. A nobel gas element is monoatomic as well as monovalent. **FALSE**
5. A substance in solution is indicated in a chemical equation by the symbol s. **FALSE**

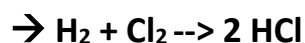
### SHORT ANSWER QUESTIONS

1. WHAT DOES THE SYMBOL OF AN ELEMENT MEAN ?  
→ **A symbol an abbreviation for the name of an element .**
2. HOW ARE THE SYMBOLS OF CARBON , CHLORINE , CHROMIUM AND COBALT DISTINGUISHED FROM EACH OTHER?  
→ **CARBON- C**  
→ **CHLORINE- Cl**  
→ **CHROMIUM- Cr**  
→ **COBALT- Co**
3. NAME THREE MOMOATOMIC GASSES WHITH SYMBOLS  
→ **HELIUM- He**  
→ **NEON- Ne**  
→ **ARGON- Ar**
4. FROM WHICH WORDS HAVE BEEN DERVIDED THE SYMBOLS OF SODIUM, POTASSIUM, IRON AND COPPER?  
→ **LATIN**
5. DERVIDED THE FORMULA OF COPPER (II) CHLORIDE AND COPPER (II) SULPHATE?  
→ **CuCl<sub>2</sub>**  
→ **CuSO<sub>4</sub>**
6. NAME THE COMPOUNDS FeO AND Fe<sub>2</sub>O<sub>3</sub>  
-→ **ferrous oxide and ferric oxide**
7. WHAT IS THE FORMULA ALUMINUM SULPHATE?  
→ **Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>**

8. WHAT DO YOU MEAN BY BALANCED CHEMICAL EQUATION?

→ a chemical equation in which the no. of atoms of each element on the reactant side is the same as that on the product side is called a balanced chemical equation .

9. HOW MANY MOLECULES OF HYDROGEN CHLORIDE WILL BE FORMED WHEN A MOLECULE OF HYDROGEN REACTS WITH OF THE CHLORINE?



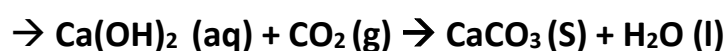
10. HOW MANY MOLECULES OF HYDROGEN WILL BE REQUIRED BY ONE OF OXYGEN FOR CONVERSION INTO WATER?

→ 2

11. IF A MOLECULE OF NITROGEN COMBINES WITH THREE OF HYDROGEN , HOW MANY MOLECULES OF AMMONIA WILL BE FORMED ?

→ 2

12. CARBON DIOXIDE TURNS LIME WATER MILKY WRITE A CHEMICAL EQUATION FOR THE REACTION, CONVEYING AS MUCH INFORMATION AS POSSIBLE.



### LONG ANSWER QUESTIONS

1. DISCUSS THE TREND IN VALANCY OF THE ELEMENTS THAT ONE OBSERVES WHEN THEY ARE ARRANGED IN THE INCREASING ORDER OF ATOMIC NUMBER. KNOWING THE VALANCIES OF THE CONSTITUENT ELEMENTS HOW CAN ONE ARRIVE AT THE FORMULA OF BINARY COMPOUND. GIVE THREE EXAMPLES.

Name of element	Symbol	Atomic number	Number of electrons	Distribution of electrons				Valency
				K	L	M	N	
Hydrogen	H	1	1	1				1
Helium	He	2	2	2				0
Lithium	Li	3	3	2	1			1
Beryllium	Be	4	4	2	2			2
Boron	B	5	5	2	3			3
Carbon	C	6	6	2	4			4
Nitrogen	N	7	7	2	5			3
Oxygen	O	8	8	2	6			2
Fluorine	F	9	9	2	7			1
Neon	Ne	10	10	2	8			0

a) Hydrogen fluoride



b) Lithium oxide

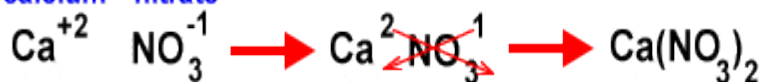


c) Carbon dioxide

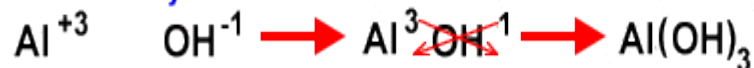


2. SHOW WITH EXAMPLES HOW WE TAKE CARE OF THE ELECTRICAL CHARGES ON RADICALS WHILE FINDING OUT THE FORMULA OF A COMPOUND MADE UP OF THEM.

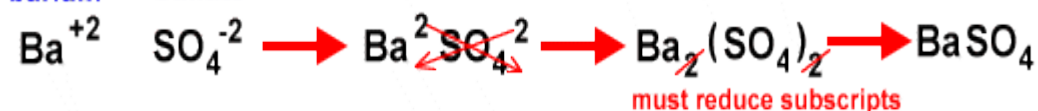
calcium nitrate



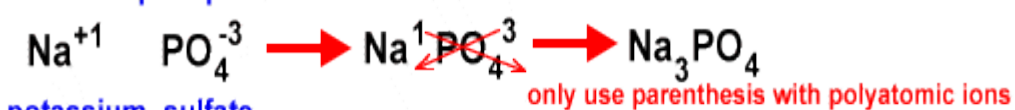
aluminum hydroxide



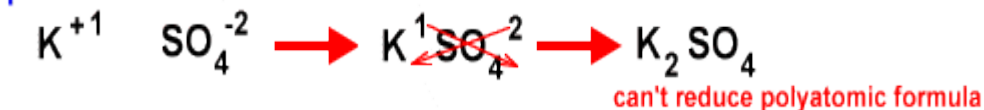
barium sulfate



sodium phosphate



potassium sulfate



→

**3. DISCUSS HOW YOU CAN MAKE A BALANCED CHEMICAL EQUATION CONVEY MORE THAN THE SYMBOLS FORMULA OF THE REACTANTS AND THE PRODUCTS.**

**→ A balanced chemical tells us how many atoms and molecules of which reactants give how many atoms of which product**

**To make the equation more informative**

- a) Mention the condition and the catalyst**
- b) Mention the state of the reactant and product**
- c) Mentioning the name and colour of substance , if needed**