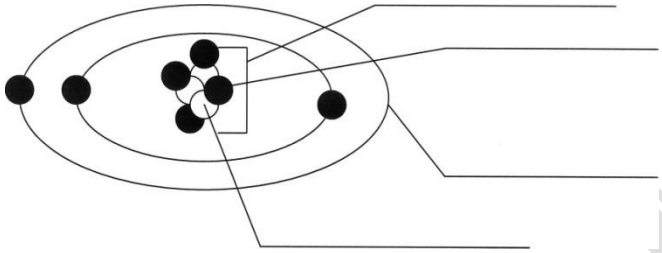
Carmel International School, Hosur

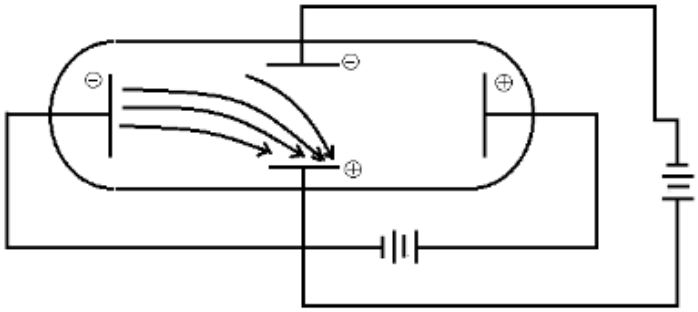
GRADE-VIII **SUB: Chemistry**

Worksheet 1 : LN 4 Atomic structure

I. Label the atom



II. Look at the diagram, label the parts and describe it



III. Define the following

1. Mass number
2. Valence shell

IV. Fill in the blanks

1. _____ is the combining capacity of an atom of an element
2. Abbreviation of IUPAC is _____
3. An ion which has a positive charge is called a _____
4. In J.J Thomson's experiment, an electric field was applied in the path of _____ rays in the discharge tub
5. Electrons revolve around the _____ in imaginary paths called orbits
6. Electrons are not accommodated in a given shell, unless the _____are filled.
7. The outermost shell of an atom is known as its _____ orbit.

V. Give the following a suitable word/ phrase

1. Protons and neutrons present in the nucleus
2. Arrangement of electrons in the shell of an atom
3. The sub atomic particle with negative charge and negligible mass
4. The number of protons present in the nucleus of an atom
5. A chemical reaction in which two compounds react in their aqueous solutions by exchanging their radicals is called

VI. Complete it.

1. The 3 particles of the atom are : _____, _____, _____
2. Their respective charges are : _____, _____, _____
3. An atom of hydrogen contains only one _____ and one _____ but no _____.

4. Rutherford could not explain the _____ of atom

VII . Find the mass number and atomic number

	Protons	Neutrons	Electrons	Charge	Atomic number	Mass number	Symbol
A	19	21	19				
B	20			0		40	
C					11	23	
D							
E	10						
F			20				
G					8		

VIII. Complete it.

1. Atomic number Z = _____ + _____
2. Mass number A = _____ + _____
3. Number of neutrons = _____ + _____

IX. Write first 20 elements name and their atomic number, mass number with the symbol

X. Draw the atomic diagram of the following atoms

a. Argon

b. Potassium

c. Silicon

d. Chlorine

e. Sulphur

Chemistry worksheet 2 : LN 5 Language of chemistry

I. Complete the tabular column

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

II. Write the formula of cations and anions

CATIONS		ANIONS	
NAME	FORMULAE	NAME	FORMULAE
HYDROGEN		HYDROXIDE	
SODIUM		CHLORIDE	
POTASIUM		NITRATE	
AMMONIUM		ACETATE	
SILVER		BICORBONATE	
CALCIUM		SULFIDE	
IRON (II)		OXIDE	
COPPER		CARBONATE	

III. Choose the correct answer

1. The substances that react with each other are called
   (A) product (B) radical (C) reactants (D) compound
2. The elements present in it are nitrogen and hydrogen
   (A) ammonia (B) hydroxide (C) nitrogen oxide (D) nitride
3. The molecule of iron (II) sulphide is represented by the formula
   (A) FeS_2 (B) FeS_4 (C) FeS (D) FeOS

IV. Write the molecular formula of the compound

1. Acetic acid
2. Glucose
3. Nitric acid
4. Iron(III) chloride
5. Magnesium carbonate
6. Calcium carbonate
7. Sodium bicarbonate
8. Calcium hydroxide
9. Sodium hydroxide
10. Aluminium oxide
11. Baking soda
12. Copper oxide
13. Iron (II) sulphide

V. Write the missing reactants and products and balance the equation:

1. NaOH + _____ → NaCl + _____
2. $KClO_3$ → _____ + _____
3. _____ + HCl →NaCl + H_2O + _____
4. NaCl + _____ → AgCl + _____
5. H_2O + _____→ H_2CO_3

VI. Write balanced chemical equation for the following word equations:

1. Zinc + Sulphuric acid → Zinc sulphate + Hydrogen
2. Iron + Chlorine → Iron (III) chlorine
3. Ammonium sulphate + Calcium hydroxide →Calcium sulphate + Ammonia + Water
4. Copper oxide + Ammonia →Copper + Nitrogen + Water
5. Magnesium + oxygen → Magnesium oxide

VII. Write your observations and name the products when

a. Zinc reacts with dilute hydrochloric acid

b. Iron nails are added to an aqueous solutions of copper sulphate

c. An aqueous solution of barium chloride is added to dilute sulphuric acid

VIII. . Fill in the blanks with the most appropriate term:

A _____ _____ tells the story of a chemical reaction. _____ are the starting substances in the reaction while _____ are the new substances that are formed. The large numbers in front of some of the formulas are called _____. These numbers are used to _____ the equation because chemical reactions must obey the Law of _____ of Matter. The number of atoms of each element on both sides of the equation must be _____ because matter cannot be _____ or _____. When balancing equations, the only numbers that can be changed are _____; remember that _____ must never be changed in order to balance an equation.

IX. Balance the following equations:

1. ___ $NaNO_3$+ ___ PbO →___ $Pb(NO_{3)2}$+ ___ Na_2O
2. ___ AgI + ___ $Fe_2(CO_3)_3$ →___ FeI_3+ ___ Ag_2CO_3
3. ___ $C_2H_4O_2$+ ___ O_2 →___ CO_2+ ___ H_2O
4. ___ $ZnSO_4$+ ___ Li_2CO_3 →___ $ZnCO_3$+ ___ Li_2SO_4
5. ___ Na_2SO_3+ ___ HCl→___ NaCl + __H_2O +SO_2
6. ___ $Mn(NO_2)_2$+ ___ $BeCl_2$ → ___ $Be(NO_{2)2}$+ ___ $MnCl_2$
7. ___ AgBr + ___ $GaPO_4$ → ___ Ag_3PO_4+ ___ $GaBr_3$

8. ___ H_2SO_4+ ___ $B(OH)_3$ →__ $B_2(SO_4)_3$+ ___ H_2O
9. ___ S_8+ ___ O_2 →___ SO_2
10. ___ Fe + ___ $AgNO_3$ →___ $Fe(NO_3)_2$+ ___ Ag
11. ___Al +_____ O_2 → Al_2O_3
12. ___C_3H_8 + O_2 → ___ CO_2 +____H_2O
13. ___ $Al(NO_3)_3$ + ___ NaOH → _____$Al(OH)_3$ +_____$NaNO_3$
14. ___KNO_3 → ___KNO_2 + ___O_2
15. ___O_2 +___CS_2 →___ CO_2 +___SO_2

X. Write the name of the molecular formula

1. $MgCO_3$
2. $Al_2(SO_4)_3$
3. Na_2CO_3
4. $FeSO_4$
5. CH_3COOH
6. NH4Cl
7. $(NH4)_3PO_4$
8. $FeCl_3$
9. SiO2
10. $C_6H_{12}O_6$
11. KMno4
12. $Ca(OH)_2$
13. KHCO3
14. H2S
15. H2CO3

Chemistry worksheet 3 : LN 6 Chemical reactions

I. Balance the reaction and indicate which type of chemical reaction (synthesis, decomposition, single-displacement, double displacement or combustion)

1. $NaBr + Ca(OH)_2 \rightarrow CaBr_2 + NaOH$
2. $NH_3 + H_2SO_4 \rightarrow (NH_4)_2SO_4$
3. $C_5H_9O + 27\ O_2 \rightarrow 20\ CO_2 + 18\ H_2O$
4. $Pb + H_3PO_4 \rightarrow H_2 + Pb_3(PO_4)_2$
5. $Li_3N + NH_4NO_3 \rightarrow 3\ LiNO_3 + (NH_4)3N$
6. $HBr + Al(OH)_3 \rightarrow H_2O + AlBr_3$
7. $CaCO_3 \rightarrow CaO + CO_2$
8. $Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$
9. $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$
10. . $NH_3 + HCl \rightarrow NH_4Cl$
11. $CuSO_4 + H_2S \rightarrow CuS + H_2SO_4$
12. $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$
13. $2Ca + O_2 \rightarrow 2CaO$
14. $NaOH + HCl \rightarrow NaCl + H_2O$
15. $KOH + H_2SO_4 \rightarrow K_2SO_4 + H_2O$

II. Choose the correct answer

1. Which one of the following alters the rate of the chemical reaction without itself undergoing any change?
   (A) temperature and pressure (B) concentration of reactants
   (C) presence of catalyst (D) all of these
2. Heat energy is evolved in these reaction
   (A) thermal decomposition (B) exothermic reaction
   (C) endothermic reaction (D) none of these
3. Thermal decomposition of a substance is brought about with the help of
   (A) reactant (B) water
   (C) wind (D) heat
4. Acidic soil is treated with bases
   (A) water (B) quick lime
   (C) formic acid (D) sodium hydroxide
5. In reactivity series of metals which one is most active metal
   (A) sodium (B) calcium
   (C) potassium (D) hydrogen
6. Phenolphthalein is the example of
   (A) acid (B) indicators
   (C) base (D) noble gases
7. Name the oxide reacts with acids as well as bases to produce salt and water
   (A) sodium hydroxide (B) potassium hydroxide
   (C) zinc oxide (D) calcium carbonate
8. The other name of calcium hydroxide is
   (A) slaked lime (B) quick lime
   (C) lime water (D) hydrogen chloride

III. Give reason:

1. A person suffering from acidity is advised to take an antacid
2. Acidic soil is treated with quick lime
3. Wasp sting is treated with vinegar

IV. Name the characteristics of chemical reactions and give one example for each

V. What are the conditions necessary for chemical reaction explain with example

VI. Write the colour change in acidic and basic solution of indicators

1. Litmus : _____, _____
2. Methyl orange : _____, _____
3. Phenolphthalein : _____, _____