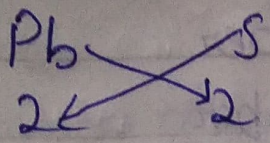
Lead sulphide

Formula of lead sulphide is PbS



Symbols Combining power - Pb_2S_2

Here the subscript numbers is same. So, PbS

8. Give two examples each of compounds existing in the following states:

(a) Solid - Sand, Common salt

(b) Liquid - Water, vinegar

(c) Gaseous - ~~Oxygen, Nitrogen~~ Carbon dioxide, Carbon monoxide

Exercise - III

1. Name:

(a) Three different forms of carbon.

Ans- (1) Diamond, (2) Graphite, (3) Coal

b) A form of carbon used as gem.

Ans- Diamond is used as gem.

c) Two substances used to make electric wires.

Ans- (1) Copper

(2) Alluminium as these are good conductors of electricity.

d. Two substances used to make jewellery.

Ans- 1. Gold
2. Silver as these are shining, lustrous and ductile.

e. A substance used as an insulator

Ans- Plastic is used as insulator as it is bad conductor of electricity.

2. Give one use of each of the following substances:

(a) Iron

Ans- To make machines tools and building materials.

(b) Brass

Ans- To make water taps and utensils

(c) Coal

Ans- Coal is used as fuel also used in thermal power plant to produce electricity.

3. Give reasons:

a) A frying pan is made up of steel but its handle is made up of wood

Ans- Steel is good conductor of heat to cook food, pan is made of steel where as wood is insulator of heat and to hold, handle is made up of wood.

b) Graphite is used to make lead of the pencils.

Ans Graphite leaves mark on the paper and make it black.

(c) Argon is filled in electric bulbs.

Ans- Argon is inert gas and protects the element of bulb from oxidation and burning. Hence increases bulb's life.

4. Answer the following questions:

(a) Why Coppar and alluminium used to make electric wires?

Ans- Coppar and alluminium are good conductors of heat and electricity. They can be drawn into wires and beated into sheets. Therefore, they are used to make ~~electrical~~ electric wires.

(b) What do you understand by the statement: 'metals are ductile and malleable'?

Ans- Metals are ductile i.e, they can be drawn or stretched into thin wires. They are malleable, i.e, they can be beaten into thin sheets.

Objective Type Questions

1. Fill in the blanks.

(a) Atomicity refers to the number of atoms in the molecule of an element.

(b) The most abundant element in the Earth's crust is Oxygen.

(c) A metal which is a liquid at room temperature is mercury

(d) The most abundant element in the atmosphere is nitrogen.

(e) A metal which is poor conductor of electricity is tungsen,

(f) Adiatomic gaseous element is oxygen.

g) A liquid non-metal is bromine.

2. Match the columns

Column A	Column B
(a) Metals	i) Non-reactive
(b) Molecules	ii) Brittle
c) Non-metals	iii) Lustrous
d) Noble gases	iv) Smallest unit of Compound

3. Indicate whether the following statements are true or false.

a) A compound is made up of just one kind of atom

Ans- False

b) Metals reflect light are are good conductors of electricity

Ans- True

c) Metals can be polished.
Ans- True

d) Elements are made up of compounds.
Ans- False

e) All elements are artificially prepared.
Ans- False

f) Molecules can exist independently.
Ans. True

g) Molecules combine to form atoms.
Ans- False

h) Noble gases are high reactive.
Ans- False

i) Ozone is a triatomic molecule.
Ans- True

Multiple Choice Questions

Q. Tick (✓) the correct alternative from the choice given for the following statements:

1. All pure substances have
Ans- d) a definite set of properties

2. Sugar is a compound which consists of the elements
Ans- c) Carbon, hydrogen and oxygen

3. Atoms of different kinds combine to form molecules of
Ans- b) a compound

4. Sulphur and carbon are

Ans- b) ~~non-metals~~ non-metals

5. Gold is used to make jewellery because

Ans- b) lustrous and attractive

6. The most abundant elements in the universe are

Ans- b) hydrogen and helium

7. The compound used as common salt is

Ans- Sodium chloride

8. Brass and bronze are

Ans- b) mixtures

9. Sand is a compound of

Ans- Silicon and oxygen

10. From the list given below select the correct substance which is most suitable to the statements given: (Oxygen, diamond, zinc, graphite, gold)

Ans- (a) Zinc

(b) Graphite

(c) Diamond

(e) Oxygen

H.W
02.08.21

Date
Page 94

Exercise -1

1. Classify the following substances into elements and Compounds.
Mercury, Sulphur, Sugar, water, sand, gold, carbon oxygen, alcohol, iron, marble, baking soda

Ans- Element : Mercury, Sulphur, gold, oxygen, Carbon, Iron

Compound : Sugar, Water, Sand, alcohol, marble, baking soda.

2. Give the symbols of : Carbon, Calcium, Copper, Chlorine Cobalt, argon.

Ans- Carbon is C
Calcium is Ca
Copper is Cu
Chlorine is Cl
Cobalt is Co
Argon is Ar

3. Define a pure Substance. How many types of pure substances do you know?

Ans- Pure Substances : "A Substance of a definite composition which has consistent properties throughout, is called a Pure ~~that~~ Substance".

Types of pure substances : Pure substances are of two types (i) Elements and (ii) Compounds.

4. Define :

(a) Elements

Ans- An element is defined as a pure substance made up of only one kind of atoms that cannot be converted into anything simpler than itself by any physical or chemical process.

(b) Compounds

Ans- Compounds are pure substances composed of two or more elements in definite proportion by mass and has a definite set of properties. Compound is made up of only one kind of molecules.

5. Give two examples for each of the following :

(a) Metals : Iron, silver, gold

(b) Non-metals : Carbon, Sulphur, Oxygen

(c) Metalloids : Antimony, Silicon, boron

(d) Noble gases : Helium, argon, neon

6. Name the elements which form water. How will you justify that water is a compound?

Ans- The elements which form water are Hydrogen and Oxygen.

Justification : Water has entirely different properties (i.e. is a liquid, extinguishes fire) from the elements it is made up of i.e Hydrogen a gas catches fire, Oxygen a gas supporter of combustion.

1. Energy is needed to form water on combining O_2 with H_2.
2. We can not separate the constituents of water by simple physical means.

7. Give three differences between metals and non-metals.

Ans- Metals :
1. Metals are ductile i.e. can be drawn into wires.
2. Metas are malleable i.e can be beaten to form sheets.
3. They are sonorous.

Non-metals
1. Non-metals are mostly soft solids cannot be drawn into wires.
2. They are mostly gases and are not malleable.
3. They donot produce sound when struck.

8. How sodium chloride different from its constituent elements, Sodium and Chlorine?

Ans- Sodium is a metal that is stored in kerosene oil as it reacts very fast with air and water. Chlorine is a reactive greenish yellow gas which is poisonous. When these two elements combine chemically they from common salt Sodium chloride which is non poisonous colourless solid substance that we use in our food to add taste and to obtain some nutrition.

9. Name four important characteristics of compounds.

Ans- Four important characteristics of compounds are-

1. When compound is formed energy like heat, light or electricity is either needed or produced.
2. A compound has properties entirely different from the properties of its constituents.
3. Change in weight takes place.
4. It cannot be separated into its constituents by simple physical means.

10. Give two example for each of the following :

(a) Non-metals which are solids

Ans- Phosphorus, Sulphur

(b) Metals which are soft

Ans- Lead and Sodium

(c) Non-metals which are lustrous

Ans- Radium, Graphite

(d) Elements which are liquids

Ans- Mercury, Bromine

(e) Inert gases

Ans- Helium, Neon

(f) Metalloids

Ans- Antimony, Arsenic

11. Name the elements present

(a) Sugar : Carbon, hydrogen & Oxygen

(b) Ammonia : Nitrogen and hydrogen

(c) Marble : Calcium, Carbon & Oxygen

(d) Washing Soda : Sodium, Carbon & oxygen

12. What is the proportion of elements present in the following compounds ?

Compounds	Elements	Proportion of elements
(a) H_2O	H : O	1 : 8
(b) CO_2	C : O	3 : 8
(c) CaO	Ca : O	5 : 2
(d) NO_2	N : O	7 : 16

13. Name two compounds which dissolve in water.

Ans- Two Compounds which dissolve in water are sugar, table salt.

Exercise-II

1. Define

(a) Atom: An atom is the smallest indivisible unit of an element which exhibits all the properties of that element and may or may not have independent existence.

(b) Molecule: A molecule can be defined as the smallest unit of an element or a compound and has independent existence. They are divisible into atoms.

(c) Atomicity: The number of atoms in a molecule of an element is called it Atomicity.

(d) Formula: Formula is a short way of representing the molecule of an element or a compound.

2. Why are symbols and formulae of substances important?

Ans- Importance of symbols and Formulae:
Symbol and formulae of substances gives a lot of information like.

1. Types of elements present in the compound. E.g (H_2O is made of two elements hydrogen and oxygen).
2. Number of each kind of atoms in one molecule. E.g. (Water has 2 atoms of hydrogen combined with 1 atom of oxygen.
3. Mass of one molecule of the compound. E.g. (H_2O has mass $(1 \times 2) + 16 = 18$ g).

3. Mention three gaseous elements and write their molecular formulae

Ans- Three gaseous elements

	Molecular Formula	Atoms in one molecule
Hydrogen	H_2	2
Oxygen	O_2	2
Chlorine	Cl_2	2

4. State the information obtained from the formula of a compound.

Ans- A formula gives us the following information about a compound.

1. Types of elements present in the compound.
2. Number of each kind of atoms in one molecule of the compound.
3. Mass of one molecule of the compound.

Example:

A molecule of carbon dioxide gas is represented by CO_2. It indicates that a carbon dioxide molecule is formed by the combination of two elements i.e. Carbon and oxygen. The number of Carbon atom is one and that of oxygen atom is two. The mass of one molecule of carbon dioxide can be calculate by adding the mass of one atom of carbon and two atoms of oxygen.

5. ~~What is meant by~~ State the difference between the following:

(a) 2H and H_2

Ans- 2H is two atoms of hydrogen. H_2 is one molecule of hydrogen gas.

(b) H_2O and $3H_2O$?

Ans- H_2O represents one molecule of water, $3H_2O$ represents 3 molecules of water.

6. State the number of atoms of each element, present in

(a) $C_6H_{12}O_6$

Ans- $C_6H_{12}O_6$ has atoms of

Carbon 6 atoms in number

Hydrogen 12 atoms in number

Oxygen 6 atoms in number. The name of compound is Glucose

(b) H_2SO_4

Ans- Hydrogen 2 atoms in number

Sulphur 1 atoms in number

Oxygen 4 atoms in number

The name of the compound is Sulphuric acid.

(c) HNO_3

Ans- Hydrogen 1 atom in number

Nitrogen 1 atom in number

Oxygen 3 atoms in number

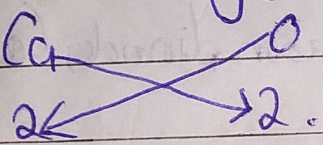
The name of the compound is Nitric Acid.

d) $CaCO_3$

Ans- Calcium 1 atom in number
Carbon 1 atom in number
Oxygen 3 atom in number
The name of the compound is Calcium Carbonate.

7. Write the molecular formulae of compounds Calcium oxide, hydrogen sulphide, Carbon monoxide and lead sulphide.

Ans- Compound Calcium oxide is formed of elements Calcium (Ca) and oxygen (O).



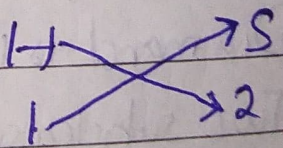
O_2 Ca_2O_2

Symbols combing power; Here subscript number is same. Formula of Calcium oxide is CaO.

Hydrogen Sulphide

Compound hydrogen sulphide is formed of elements hydrogen (H), sulphide (S)

Symbols Combining power



Formula is H_2S

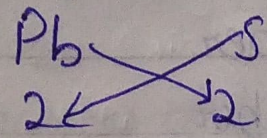
Carbon monoxide

Compound Carbon Monoxide is Compound of elements Carbon (C) and Oxygen (O)

The formula of Carbon monoxide is CO

Lead sulphide

Formula of lead sulphide is PbS



Symbols Combining power - Pb_2S_2

Here the subscript numbers is same. So, PbS

8. Give two examples each of compounds existing in the following states:

(a) Solid - Sand, Common salt

(b) Liquid - Water, vinegar

(c) Gaseous - ~~Oxygen, Nitrogen~~ Carbon dioxide, Carbon monoxide

Exercise - III

1. Name:

(a) Three different forms of carbon.

Ans- (1) Diamond, (2) Graphite, (3) Coal

b) A form of carbon used as gem.

Ans- Diamond is used as gem.

c) Two substances used to make electric wires.

Ans- (1) Copper

(2) Aluminium as these are good conductors of electricity.