

HW
2/8/21

Ex-I

3) ans) Pure substances are substances that have a definite composition which has consistent properties throughout. They are of two types:- elements and compounds.

- 5) a) Metal:- Gold, silver, iron, Mercury etc.
- b) Non-metals:- Carbon, oxygen, sulphur etc.
- c) Metalloids:- Boron, Silicon, Germanium etc.
- d) Noble gases:- Helium, Neon, Argon, Xenon etc.

6) ans) Water is formed when the two elements hydrogen and oxygen combine chemically in a fixed ratio of 1:8 by mass.

The three characteristics that justify water is a compound are:-

- It consists of two elements.
- It is pure.
- Its components cannot be separated by simple physical means, e.g. filtration, evaporation, decantation, boiling, melting, freezing, etc.

7) ans) Metals	Non-metals
<ul style="list-style-type: none">• Lustrous.• Good conductors of heat.• High melting point.• High density.• Malleable	<ul style="list-style-type: none">• Have no lustre.• Bad conductors of heat.• Low melting point.• Low density.• Non-malleable

- Usually solid in room temperature.
- Ductile
- Opaque as a thin sheet.
- Sonorous
- Very hard

- Can be solid, liquid or gas in room temperature.
- ~~D~~ Non-ductile
- Transparent as a thin sheet.
- Not sonorous
- Brittle

EX III

1) a) 1. Diamond

2. Graphite

3. Coal

b) Diamond is used as gem

c) 1. Copper

2. Aluminium as these are good conductors of electricity.

d) 1. Gold

2. Silver as these are shining, lustrous and ductile.

e) Plastic is used as insulator as it is bad conductor of electricity.

2) a) Iron: To make machines, tools and building material.

b) Brass: To make water taps and utensils.

c) Coal: Coal is used as fuel also used in thermal power plants to produce electricity.

3) a) 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 leaves mark on the paper and makes it black.

c) Argon is inert gas and protects the element of bulb from oxidation and burning. Hence it increases bulb's life.

- 7) a) Copper and aluminium are good conductors of heat and electricity. They can be drawn into wires and beaten into sheets. Therefore, they are used to make electric wires.
- b) 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) Atomicity refers to the number of atoms in the molecule of an element.
- 2) The most abundant element in the earth's crust is oxygen.
- 3) A metal which is a liquid at room temperature is mercury.
- 4) The most abundant element in the atmosphere is nitrogen.
- 5) A metal which is a poor conductor of electricity is tungsten.
- 6) A diatomic gaseous element is oxygen.
- 7) A liquid non-metal is bromine.

2) ans) Column A

- a) Metals
- b) Molecules
- c) Non-metals
- d) Noble gases

Column B

- (iii) Lustrous
- (iv) smallest unit of compound
- (ii) Brittle
- (i) Non-reactive

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

Correct - A compound is made up of two or more elements in a fixed proportion by mass.

b) Metals reflect light and are good conductors of electricity.
ans) True

c) Metals can be polished.
ans) True

d) Elements are made up of compounds.
ans) False

Correct: Elements are made up of atoms.

e) All elements are artificially prepared.
ans) False

Correct: All elements are made up of a limited number of basic substances.

f) Molecules can exist independently.
ans) True

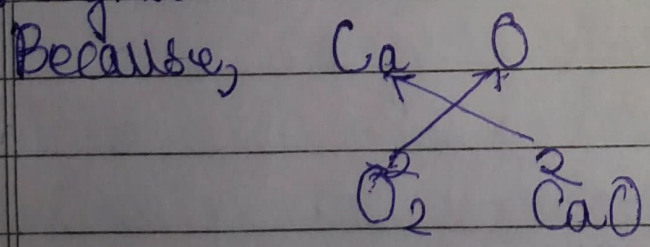
g) Molecules combine to form atoms.
ans) False
Correct: Atoms combine to form molecules.

h) Noble gases are highly reactive.
ans) False
Correct: Noble gases are non-reactive.

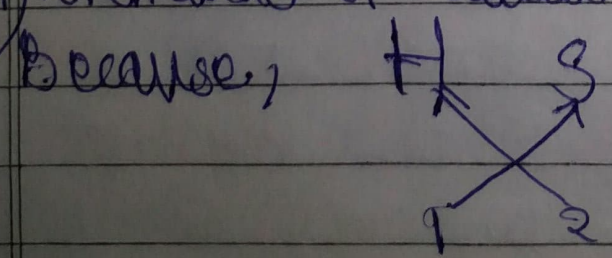
i) Ozone is a triatomic molecule.
ans) True

Ex-II

7) Formulae of Calcium oxide is CaO.



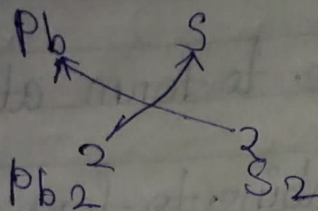
ii) Formulae of Hydrogen sulphide is H_2S .



iii) Formulae of Carbon Monoxide is CO.

iv) Formulae of Lead Sulphide is PbS.

Because,



Here the subscript number is same.

a) Solid

Ex:- Calcium hydroxide, Glucose

b) Liquid

Ex:- Water, Hydrochloric acid, Sulphuric acid

c) Gaseous

Ex:- Carbon dioxide, Carbon monoxide, Ammonia

Extra

Formulae of:

i) Iron oxide - FeO

ii) Calcium oxide - CaO

iii) Sodium oxide - Na₂O

iv) Zinc chloride - ~~NA~~ ZnCl₂

HW
2/9/21

Ex-I

1) ans) Elements: Mercury, sulphur, gold, coal, oxygen
Compound: Sugar, water, sand, alcohol

2) ans) a) Elements: 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 chemical or physical processes.

b) Compounds: 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.

3) ans) The elements which form water are i) 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.

i) Energy is needed to form water on combining O_2 with H_2 . We can not separate the constituents of water by simpler physical means.

4) ans) Sodium is a metal that is stored in kerosene oil. It reacts very fast with air and water. Chlorine is a reactive greenish yellow gas which is poisonous.

these two elements combine chemically they form common salt sodium chloride which is non poisonous colourless solid substance ~~is~~ that we use in our food to add taste and to obtain some nutrition.

- Ans) 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 can not be separated into its constituents by simple physical means.

- 10) a) Phosphorus, Sulphur
b) Lead and Sodium
c) Barium, Graphite
d) Mercury, Bromine
e) Helium, Neon
f) Antimony, Arsenic

Compounds	Elements present
Sugar	Carbon, Hydrogen and Oxygen
Ammonia	Nitrogen and Hydrogen
Marble	Calcium, Carbon and Oxygen
Washing soda	Sodium, Carbon and Oxygen

12) ans) Compounds

	<u>Elements</u>	<u>Proportion of elements</u>
1) 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

Ex-II

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

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

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

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

2) ans) Importance of symbols and Formulae: Symbols and formulae of substances gives a lot of information like

1) Types of elements present in a 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. Eg. $[H_2O]$ has mass $(1 \times 2) + 16 = 18 \text{ g}$

3) Three gaseous elements	Molecular formula	Atoms in one molecule
1) Hydrogen	H_2	2
2) Oxygen	O_2	2
3) Chlorine	Cl_2	2

4) The 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.

Ex:- 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 dioxide atom is one and that of oxygen atom is two. The mass of one molecule of carbon dioxide can be calculated by adding the mass of one atom of carbon and two atoms of oxygen.

15) ans) a) $2H$ is two atoms of hydrogen.

H_2 is one molecule of hydrogen

b) H_2O represents one molecule of water

$3H_2O$ represents 3 molecules.

6) a)

<u>Name of atom.</u>	<u>No. of atoms</u>
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Carbon

6

Hydrogen

12

Oxygen

6

b)

<u>Name of atom</u>	<u>No. of atoms</u>
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Hydrogen

2

Sulphur

1

Oxygen

4

c)

<u>Name of atom</u>	<u>No. of atoms</u>
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Hydrogen

1

Nitrogen

1

Oxygen

3

d)

<u>Name of atom</u>	<u>No. of atoms</u>
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Calcium

1

Carbon

1

Oxygen

3

Mer

1) All pure substances have

2) 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) a) compound

4) Sulphur and Carbon are
ans) b) 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) a) Sodium chloride

8) Brass and bronze are
ans) b) mixtures

9) Sand is a compound of
ans) b) silicon and oxygen

10) a) Zinc b) Graphite c) Diamond d) oxygen