

Chemistry

- 1) i) Physics
- ii) Chemist Dmitri Mendeleev
- iii) Solids
- iv) evaporation
- v) Boiling point
- vi) Alchemists
- vii) by
- viii) A tripod stand
- ix) Gas jar
- x) Bunsen Burner
- ~~xi)~~

- 2) i) Nitrogen
- ii) Elements
- iii) cell
- iv) Freezing
- v) Sublimation

- 3) i) Preservation are added food so as to prevent or slow down the growth of micro organisms, such as mould, yeasts and bacteria in foods.
- ii) Alchemy in ancient times became what is known as chemistry in modern times. Since most of the principles can't be proven, it became a pseudoscience.

- 18) a) Ice
- b) vapour/steam

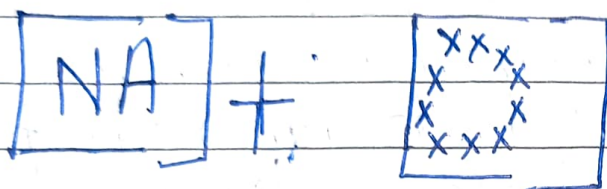
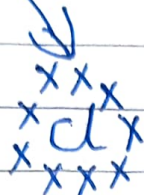
- 19) a) Elements are combined in a specific ratio 2 atoms of hydrogen and 1 atom of oxygen make water.

b) The properties of water are different from that of oxygen and hydrogen.

20)

NaCl

Na



21) Dimitri Mendeleev

- Formulated the periodic table of elements.
- He also discovered the periodic law.
- Antoine Lavoier

22) • In 1778 he recognised and named hydrogen.

• John Dalton

• In 1803, he compiled his theory named as Dalton's atomic theory.

• In his theory he discussed matter that consists of particles called atoms which are invisible and cannot be created or destroyed.

23) A compound is a pure substance made up of two or more different elements combined chemically in a fixed proportion. Ex:

- a) water, 2 atoms of H and atom of O = H_2O .
- b) carbon dioxide, 1 atom of carbon and 2 atoms of O = CO_2 .
- c) Nitrogen dioxide, 1 atom of nitrogen 2 atoms of O = NO_2 .
- d) calcium dioxide, 1 atom of calcium 1 atom of O = CaO .

23) When heat is added to a substance, the molecules and atoms vibrate faster. As atoms vibrate faster the space between atoms increase. The motion and spacing of the particles determine the state of matter of the substance solid, liquid and gas all expand when heat is added.

24) All medicine must be taken under proper doctors supervision and in the correct dose because some medicine has side effects as aspirin not taken in proper dose may cause liver problem.

25) Gold, platinum and silver are lustrance. These metals are used to make ornament and jewellery.

- copper and aluminium are good conductors of heat and electricity. They are used to make utensils, electric wires, etc.

iii) Plastic → It is not a conductor or used as an insulator. They are used for making bags, shoes, balls, bats, tyres, etc.

26) Clothes dry more quickly on a warm day than on a cold humid day because the rate of evaporation is directly proportional to temperature. Higher the rate of evaporation on the hot day compared to the cold days.

ii) Rate of evaporation is more when the area of the exposed surface is more. As the exposed in a dish is more, evaporation is also more.

iii) Rate of evaporation depends on the nature of the liquid. The more liquids like alcohol and spirit evaporate easily, hence they are stored tightly closed bottle to avoid their evaporation.

27) Philosopher's stone is not exactly a stone because it is a legendary substance capable of turning in experience metals. Such as like lead or mercury turning into gold or silver as it is not literally a stone but a powdered portion.

Elements

Compounds

Mixtures

<p>The term</p> <p>Existence</p>	<p>It is the basic unit of matter which is a pure substance and cannot be broken down.</p>	<p>It is a pure substance made by a combination of two or more elements.</p>	<p>It is an impure substance made of a combination of two or more elements or compounds or both.</p>
<p>↳</p>	<p>They can exist independent.</p>	<p>This element are combine in a fixed ratio.</p>	<p>This elements are compound are mixed in any ratio.</p>
<p>Properties</p>	<p>They have a definite set of properties.</p>	<p>This element of compound not ratio in their properties.</p>	<p>The element are compound are mixed in mixture retain their properties.</p>
<p>Separation</p>	<p>Elements cannot be broken into small substances.</p>	<p>Elements can be separated from compound by chemical methods.</p>	<p>Components of mixture can be separated by physical method.</p>
<p>Ex.</p>	<p>Iron, Sulphur</p>	<p>water, carbon dioxide</p>	<p>Iron, sulphur</p>

- a) The intermolecular space between atoms of solid is very less, so they have a definite shape and are highly rigid. On the other hand, in gases, the intermolecular space is much more than that of solid, so they don't have definite shape and are less rigid.
- b) Sugar can easily be dissolved in water without changing on its appearance as it fits in the space between molecules of water whereas, talcum powder changes the appearance of water and more over it, doesn't dissolve in water completely. So they are easily distinguished.
- c) On freezing the intermolecular space between molecules of water decrease so it gave it a definite shape and make it somewhat rigid.