

Chapter - 04

Materials: Metals and Non-Metals

Exercise 04

Que (1) which of the following can be beaten into thin sheets?

- (a) Zinc
- (b) phosphorus
- (c) Sulphur
- (d) Oxygen

Que (2) which of the following statements is correct?

- (a) All metals are ductile.
- (b) all non-metals are ductile.
- (c) Generally, metals are ductile.
- (d) Some Non-metals are ductile.

Que (3) fill in the blanks.

- (a) phosphorus is a very reactive non-metal.
- (b) Metals are good conductors of heat and electricity.
- (c) Iron is more reactive than copper.
- (d) Metals react with acids to produce hydrogen gas.

Que (4) Mark 'T' if statement is true and 'F' if it is false

- (a) Generally, non-metals react with acids. - false
- (b) Sodium is a very reactive metal. - True
- (c) Copper displaces zinc from zinc sulphate solution. - false
- (d) coal can be drawn into wires. - false

Que-5 Some property properties are listed in the following table. Distinguish between metals and non-~~metals~~ metals on the basis of these properties.

Properties	Metals	Non-metals
Appearance	Shiny	Dull
Hardness	Hard	Not very hard
Malleability	Malleable	Non-malleable
Ductility	Ductile	Not Ductile
Heat conduction	good	poor
Conduction of Electricity	good	poor

Que-6 Give reasons for the following.

(a) Aluminium foils are used to wrap food items.

Aluminium foils are used to wrap food items because aluminium metal is malleable in nature means it can be converted into thin sheets and it does not react with food items as well as it is cheaper than other metals.

(b) Immersion rods for heating liquids are made up of metallic substances.

As metals are good conductors of heat and electricity, so that can better heat up the liquids while putting them into the liquid.

(c) Copper cannot displace zinc from its salt solution.

As we know a more reactive metal can replace a less reactive metal, but a less reactive metal cannot replace

more reactive metals and we know zinc is more reactive than copper, so copper cannot displace zinc from its salt solution.

(11) Sodium and potassium are stored in kerosene.

Sodium and potassium are very reactive metals. They react vigorously with oxygen and water. A lot of heat is generated in the reaction. Therefore, they are stored in kerosene.

Que (7) Can you store lemon pickle in an aluminium utensil? Explain.

No, we cannot store lemon pickle in an aluminium utensil, as we know the reaction of acid (lemon) with metal (aluminium) forms metal salt with hydrogen gas. This reaction can lead to the spoiling of the pickle.

Que (8) Match the column A and B with substances

A

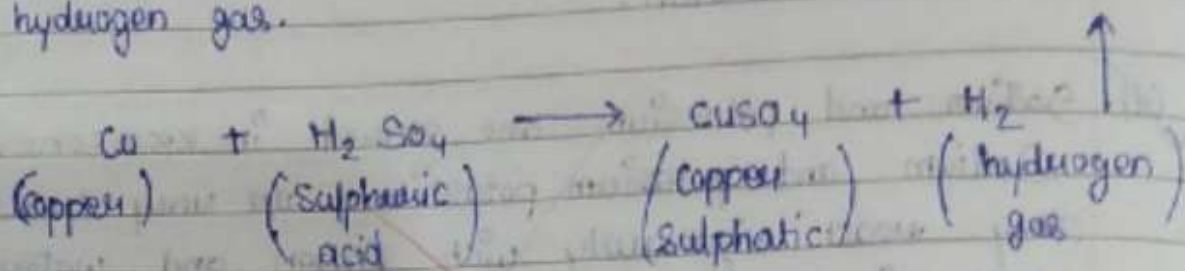
B

- | | | |
|---------------|---|---------------|
| (1) Gold | - | Tenellery |
| (2) Iron | - | Machinery |
| (3) Aluminium | - | Wrapping food |
| (4) Carbon | - | Fuel |
| (5) Copper | - | Electric wire |
| (6) Mercury | - | Thermometers |

Que (9) What happens when

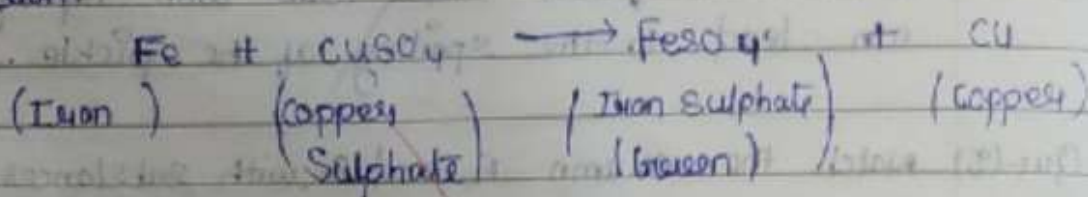
(a) Dilute sulphuric acid is poured on a copper plate?

Ans (a) when dilute sulphuric acid is poured on a copper plate, the copper metal react with sulphuric acid to form hydrogen gas.



(b) Iron nails are placed in copper sulphate solution? write down equations of the reactions involved.

Iron being more reactive displaces copper from copper sulphate solution. In this reaction, the blue colour of copper sulphate fades and there is deposition of the copper on the iron.



Que-(a) Saloni took a piece of burning charcoal and collected the gas evolved in a test tube.

(a) How will she find the nature of the gas?

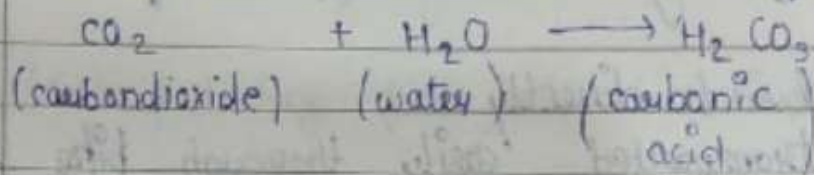
At a few drops of water in the test tube containing gas. Now, ~~cover~~ cover the test tube and shake it well.

After shaking, test the solution with Blue and Red litmus paper. This solution will turn Blue litmus Red. Thus, the gas is acidic in nature.

(b) write down word equations of all the reaction taking place in this process.

Ans charcoal reacts with oxygen to form $C + O_2 \rightarrow CO_2$
(charcoal) (oxygen) (carbon dioxide)

Carbon dioxide reacts with water to form carbonic acid, which turns blue litmus to red which confirms that acid is formed



Non-metallic oxides are acidic in nature.

Que-(1) One day Reeh went to a jeweller's shop with her mother. Her mother gave an old gold jewellery to the goldsmith to polish. Next day when they brought the jewellery back, they found that there was a slight loss in its weight. Can you suggest a reason for the loss in weight?

To polish a gold ornaments it is dipped in a liquid called aqua-regia (a mixture of hydrochloric acid and nitric acid). On getting the environment of aqua-regia the outer layer of gold dissolves the inner shiny layer appears. The dissolving of layer causes a reduction in the weight of the jewellery.