

27.4.19

Date

Page No.

Chapter-4

Materials : Metals and Non-Metals

Notes -

1. Matter - Anything that occupies space and has mass ~~called~~ matter.
2. Elements - Elements is a substance that cannot be split up into two or more simpler substances by usual chemical methods.
3. Metals - Iron, copper, tin, gold etc. are some metals. In general, metals are hard and shiny in appearance.
4. Non-Metals - Sulphur, phosphorus, hydrogen, oxygen etc. are some non-metals. In general, they are not so hard, most of them has dull appearance.
5. Metalloids - Some elements have certain properties of both, metals and non-metals, these are called metalloids. Eg - Silicon



germanium etc.

6. Ores- The minerals from which the metals can be extracted conveniently and profitably are called ores.
7. Metallurgy- The series of processes carried out to extract metals from their ores is called metallurgy.
8. Malleability- The property that allows the metals to be hammered into thin sheets or foils are called malleability.
9. Brittleness- The property due to which non-metals break up into pieces on hammering is called brittleness.
10. Ductility- The property that allows the metals to be drawn into thin wires called ductility.
11. Sonority- The property of producing a ringing sound by a metal when it strikes with a hard material is called sonority.

12. Displacement reaction - Displacement reaction is a chemical reaction in which a more reactive element displaces a less reactive element from its salt solution. Chemical reaction $\rightarrow$
- $$\text{Fe} + \text{CuSO}_4 \longrightarrow \text{Cu} + \text{FeSO}_4$$

Short Answer -

Q.1 What happens when the following metals react with dilute hydrochloric acid?

(a) Magnesium $\rightarrow$ A vigorous reaction with the evolution of bubbles of a colourless gas.

(b) Aluminium $\rightarrow$ A vigorous reaction with the evolution of bubbles of a colourless gas.

Q.2. What is meant by 'rusting of iron'?

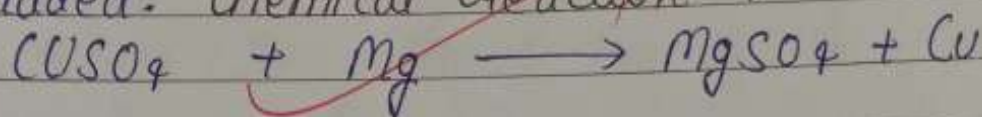
Ans= When an iron object is left in damp air for a considerable amount of time it gets covered with a reddish-brown flaky substance called rust, this is called



rusting of iron.

Q. 4. What will be the change in the color of copper sulphate when magnesium is added to it? Write a balanced chemical equation for the same.

Ans = The colour of copper sulphate solution becomes colourless when magnesium is added. chemical reaction $\rightarrow$



Short Ans. -

Q. 1 Give reason -

(a) Electric wires are made up of copper.

Ans = Electric wires are made up of copper because they are good conductor of electricity and they are so cheap also.

(b) Gold and silver are used for making jewellery.

Ans = Gold and silver are quite unreactive so, they are used for making jewellery.



(c) Graphite is used for making electrodes in electric cells.

Ans- Graphite is a non-metal but it is good conductor of electricity, so it is used for making electrodes in electric cells.

Q.2(a) Name the property because of which strings in guitars are made of metal.

Ans- Sonority.

(b) What do we learn from Sonu?

Ans- We learn from Sonu that, money is not everything, sometimes smiles and happiness fulfill our needs.

Long Ans-

Q.1- State any 5 physical property on which metal can be distinguished from non-metals?

Ans- Properties on which metals can be



distinguished -

1. Malleability / ductile - Metals are malleable and ductile.

Non-metals are neither malleable nor ductile. They are brittle in nature.

2. Sonority - Metals are sonorous.

Non-metals are non-sonorous.

3. Hardness - Metals are generally hard.

Non-metals are quite soft (except diamond)

4. Lustre - Metals are lustrous.

Non-metals are non-lustrous.

5. Electrical conductivity - All metals are good conductor of electricity.

Non-metals are bad-conductor of electricity (except graphite)

Q.2 State any three physical and two chemical properties to prove that copper is metal.

Ans= Physical properties of copper-

- (i) Like other metals copper is hard and shiny.
- (ii) Like other metals copper is also malleable and ductile.
- (iii) Like other metals copper is also a good conductor of electricity and heat.

Chemical properties of copper-

- (i) Copper react with water to form copper oxide
- (ii) Copper reacts with water and air (moisture), It looses its shine. due to formation of copper hydroxide and copper carbonate.

Final
7/8/19

