

CLASS-10TH -CHAPTER -3 Metals and Non-metals

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1 marks questions (very short answer type question)

Q.1:- Name a metal which can be cut with a knife?

Ans:- sodium

Q.2:- Which metal is the best conductor of electricity?

Ans:- silver

Q.3 Which metal is poorest conductor of electricity?

Ans:- iron Q.4 Which metal is most ductile?

Ans:- gold

Q.5 Which metal is best conductor of heat ?

Ans:- silver (and copper)

Q.6:- Which metal other than mercury is liquid at room temperature? Ans:- Gallium

Q.7:- Which metal is poorest conductor of heat?

Ans:- lead (and mercury)

Q.8:- What is the nature of oxides of metal?

Ans:- Basic

Q.9:- What is the nature of oxides of non-metal?

Ans:- Acidic

Q.10:- Which non-metal conducts electricity?

Ans:- Graphite, allotrope of carbon conducts electricity.

Q.11:- Which non-metal is lustrous? Ans:- iodine

Q.12:- Why are metals hard and have high melting point?

Ans:- because of their crystalline structure metals are hard.

Q.13:- What is an amalgam? Ans:- An alloy of two metals in which one is mercury is called amalgam.

Q.14:- What are the constituents of solder?

Ans:- tin and lead

Q.15:- Name the green coloured compound which appears on the surface of copper utensils?

Ans:- Basic copper carbonate

Q.16:- Why does the item made of silver turn black when exposed to air?

Ans:- due to formation of silver sulphide

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2 marks questions (short answer type question)

Q.1:- What are amphoteric oxides? Give an example.

Ans:- Oxides which react with both acids as well as bases to produce salt and water are called amphoteric oxides .for example:- Al_2O_3 . ZnO

Q.2:- Name two metals that react with dil. HNO_3 to evolve H_2 gas ?

Ans:- magnesium and manganese Q.3:- Why metals like potassium and sodium catch fire when treated with water? Ans:- The reaction between sodium and water is so violent that the H_2 gas released catches fire .

Reaction:- $2\text{Na(s)} + 2\text{H}_2\text{O(l)} \rightarrow 2\text{NaOH(aq)} + \text{H}_2\text{(s)} + \text{heat energy}$

Q.4:- Why sodium is kept immersed in kerosene oil?

Ans:- because sodium react with air to form Na_2O (sodium oxide).

Q.5:- Which gas is produced when dil. HCl is added to a reactive metal? Write the chemical reaction when iron reacts with dil. H_2SO_4 ?

Ans:- hydrogen gas is produce when dil. HCl is added to a reactive metal.

$\text{Fe(s)} + \text{H}_2\text{SO}_4\text{(dil.)} \rightarrow \text{FeSO}_4\text{(aq)} + \text{H}_2\text{(g)}$

Q.6:- What would you observe when zinc is added to a solution of iron(II) sulphate ?write the chemical reaction that takes place.

Ans:- The solution of iron(II)sulphate slowly turns to colourless and grey coloured layer of Fe is deposited on the surface of zinc metal.

$\text{Zn(s)} + \text{FeSO}_4\text{(aq)} \rightarrow \text{ZnSO}_4\text{(aq)} + \text{Fe(s)}$

Q. 8:- Why ionic compounds have high melting points?

Ans:- Ionic solids have crystalline structure in which there is strong interionic attraction. So large amount of energy is needed to overcome this force of attraction.

Q. 9:- What do you mean by roasting? How it is different from calcination? In which types of ores roasting is done?

Ans:- Heating an ore strongly in excess of air is called roasting. This is done to convert sulphide ores into its oxide form. Calcination is different from roasting because it is done in absence of air.

$2\text{ZnS(s)} + 3\text{O}_2\text{(g)} \xrightarrow{\text{heat}} 2\text{ZnO(s)} + 2\text{SO}_2$

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Q10:- Define :- (i) Ore, (ii) Mineral.

Ans:- **Ore**:- The minerals from which an element can be extracted profitably and conveniently is called ore. E.g. - Bauxite, $Al_2O_3 \cdot 2H_2O$ – is an ore of aluminum.

Mineral:- The compounds of elements that occurs naturally in earth's crust are called minerals. E.g.- Glauber's salt $Na_2SO_4 \cdot 7H_2O$; Borax $Na_2B_4O_7 \cdot 10H_2O$ are two mineral sources of Sodium.

Q.11:- Name two metals which are found in nature in the free state.

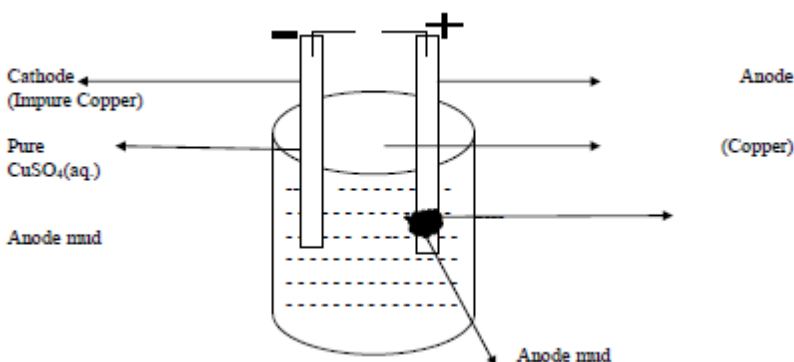
Ans:- Silver and Gold.

Q.12:- Define :- (i) Enrichment of Ores (ii) Gangue. Ans:- (i) Removal of earthy impurities like sand, clay from an ore is called enrichment of ore.

(ii) The earthy impurities like sand, clay that are found along with an ore are called gangue or matrix.

Q.13:- Write short notes on electrolytic refining of metals.

Ans:- In electrolytic refining the impure metal is taken as anode and the pure metal is taken as cathode. These two rods are dipped in aqueous salt solution of the same metal and electricity is passed. Pure metal from anode is dissolved into the solution and equivalent amount of pure metal from the electrolyte is deposited at the cathode.



Q.14:- Name the conditions which are essential for corrosion.

Ans:- (i) Presence of moisture, (ii) Presence of air.

Q.15:- What is Galvanisation? Write its use.

Ans:- Galvanisation is a method of protecting steel and iron from rusting by coating them with a thin layer of Zinc.