



### 10th Metals and Non-Metals Test Paper Solved - 04

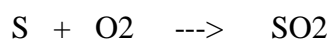
#### Questions with Answers:

Que1: Carbon can reduce copper oxide to copper but not calcium oxide to calcium. Why?

Ans: Carbon is a strong reducing agent so it can reduce copper oxide but calcium is much more reactive than copper and has greater affinity for oxygen than carbon has. So it cannot reduce calcium oxide to calcium.

2. A yellow coloured powder `X` is soluble in carbon disulfide. It burns with a blue flame forming suffocating smelling gas which turns moist blue litmus red. Identify `X` and gives chemical reaction. Identify it is metal or nonmetal.

Ans 2: `X` is sulphur



It is non metal.

Que3. Nikita took Zn, Al, Cu, Fe, Mg, Na metals & put each metal in cold water and then hot water. She reacted the metal with steam

- Name the metal which reacts with cold water.
- Which of the above metals react with steam?
- Name the metal which reacts with hot water.
- Arrange these metals in order of increasing reactivity.

Ans.3 (i) Na (ii) Al, Zn, Fe (iii) Mg (iv) Na > Mg > Al > Zn > Fe > Cu

Que4. A student was given Mg, Zn, Fe, and Cu metals. He put each of them in dil HCl contained in different test tubes. Identify which of them

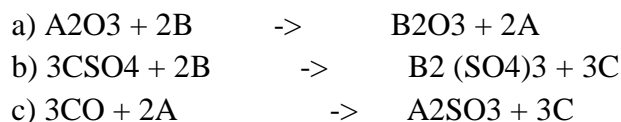
- will not displace H<sub>2</sub> from dil HCl
- forms a pale green substance
- will give H<sub>2</sub> with 5% HNO<sub>3</sub>
- will be displaced from its salt solution by all other metals.

Ans4: (i) Cu (ii) Fe (iii) Cu (iv) Cu

Que5. A metal `X` is found in the form of filings which burns vigorously when sprinkle on flame. When these filings are treated with sulphur a black colored compound `Y` is formed which is not attracted by magnet. `X` reacts with dil HCl to liberate hydrogen gas. Identify `X`, `Y`. Write the reaction involved.



Que6. A, B and C are 3 elements which undergo chemical reactions according to following equations:



Answer of the following:

- i) Which element is most reactive?                      ii) Which element is least reactive?

Ans.6 i) Most reactive element is B as it has replaced both A and C from their compounds  
ii) Element C is least reactive as it has been replaced both by A and B.

Que7: Give reasons

- i) Sodium, Potassium and Lithium are stored under oil.
- ii) Addition of some silver to pure gold for making ornaments.
- iii) Metals are good conductors of heat.

Ans7 i) These metals are very reactive so they can combine with moist air and oxygen vigorously with liberation of large amount of heat that is why they are kept in oil.

ii) Pure gold is very soft it is therefore not suitable for making jewelry . It is alloyed with either silver or copper to make it hard.

iii) When a metal is heated, its atom gain energy and vibrate more vigorously. This energy is transferred to the electrons, which can move through the metal. They transfer their energy to other electrons and atoms. In this way they conduct heat and are good conductors.

Que8 : Why does aluminum not react with water under ordinary condition?

Ans: Aluminum forms a thin tough layer of oxide on its surface. this oxide layer forms a protective coating on the metal and prevents it from further attack of water.

Que 9 Metal sulphides occur mainly in rocks and the metal halides occur mostly in seas and lakes. What could be the reason for this?

Ans: Most of the metal sulphides are insoluble in water where as metal halides are generally soluble. the metal halides( NaCl , MgCl<sub>2</sub> etc) are washed away with rain or river water in dissolved state and so the halide ores occur in lakes and seas.

Que10 Give the reason why copper is used to make hot water tanks but steel is not?

Ans: this is because iron present in steel reacts with steam to form ferric oxide whereas copper has no action with water . as a result of it , the body of steel tank becomes weaker and weaker in case of iron and not in case of copper.

