

## NCERT QUESTIONS WITH SOLUTION

1. Which metal is commonly used to make food packaging materials as it is cheaper, and its thin sheets can be folded easily into any shape?

(i) Aluminium                      (ii) Copper  
(iii) Iron                              (iv) Gold

**Ans. Option (i)**

Aluminium metal is used to make food packaging materials as it is cheaper, and its thin sheets can be folded easily into any shape.

2. Which of the following metal catches fire when it comes in contact with water?

(i) Copper                              (ii) Aluminium  
(iii) Zinc                                (iv) Sodium

**Ans. (iv)**

Sodium is high reactive metal, it catches fire when it comes in contact with water.

3. State with reason(s) whether the following statements are True [T] or False [F].

(i) Aluminium and copper are examples of non-metals used for making utensils and statues. [F]

**Ans. (i)** Aluminium and copper are metals used for making utensils and statues.

(ii) Metals form oxides when combined with oxygen, the solution of which turns blue litmus paper to red. [F]

**Ans. (ii)** Metals form oxides when combined with oxygen, the solution of which turns red litmus paper to blue.

(iii) Oxygen is a non-metal essential for respiration. [T]

**Ans.(iii)** Oxygen is a non-metal essential for respiration.

(iv) Copper vessels are used for boiling water because they are good conductors of electricity. [F]

**Ans. (iv)** Copper vessels are used for boiling water because they are good conductors of heat.

4. Why are only a few metals suitable for making jewellery?

**Ans.** Only a few metals Gold, silver and platinum are suitable for making jewellery because they do not lose shine easily most malleable and ductile and have mature lustre on the surface.

5. Match the uses of metals and non-metals given in Column I with the jumbled names of metals and non-metals given in Column II.

|       | Column-I                                                                  |     | Column-II       |
|-------|---------------------------------------------------------------------------|-----|-----------------|
| (i)   | Used in electrical wiring                                                 | (a) | E N X Y G O     |
| (ii)  | Most malleable and ductile                                                | (b) | N E C O H I R L |
| (iii) | Living organisms cannot survive without it.                               | (c) | P E P O R C     |
| (iv)  | Plants grow healthy when fertilisers containing it are added to the soil. | (d) | T E N G O I N R |
| (v)   | Used in water purification                                                | (e) | O G D L         |

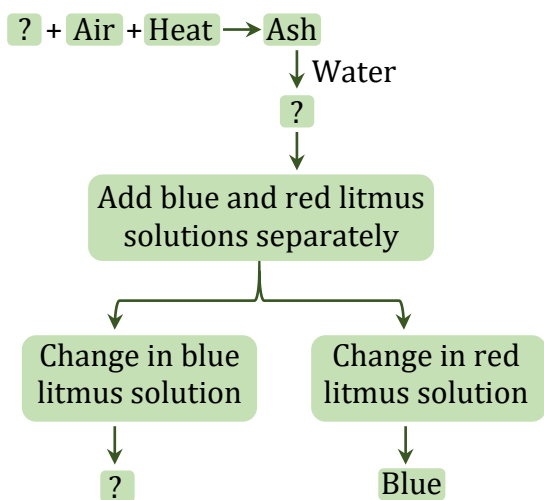
- (i) – (c) Copper
- (ii) – (e) Gold
- (iii) – (a) Oxygen
- (iv) – (d) Nitrogen
- (v) – (b) Chlorine

6. What happens when oxygen reacts with magnesium and sulfur. What are the main differences in the nature of products formed?

**Ans.** Magnesium ribbon burns with a dazzling white flame and changes into a white powder. This powder is magnesium oxide. It is formed due to the reaction between magnesium and oxygen present in the air. On adding a few drops of warm water to this white powder and stirring, it is observed that it changes the colour of red litmus paper to blue hence, it is basic in nature.

On burning sulfur in air (oxygen), sulfur dioxide gas is formed. It is acidic in nature. On dissolving sulfur dioxide gas in water, sulfurous acid is formed.

7. Complete the following flow chart:



**Ans.** Magnesium, Magnesium hydroxide, No change.

8. You are provided with the following materials. Discuss which material would be your choice to make a pan that is most suitable for boiling water and why?

Iron, copper, sulfur, coal, plastic, wood, cardboard

**Ans.** Among the given materials, only iron and copper are metals, and both are good conductors of heat. However, copper is the best choice because it is highly resistant to rust compared to iron. Therefore, a pan made of copper is the most suitable choice for boiling water.

9. You are provided with three iron nails, each dipped in oil, water and vinegar. Which iron nail will not rust, and why?

**Ans.** The iron nail dipped in oil will not rust because the oil prevents the iron nail from coming into contact with air or moisture. It forms a protective layer on the metal, which prevents rusting.

10. How do the different properties of metals and non-metals determine their uses in everyday life?

Metals and non-metals have various properties that make them useful in our everyday life.

**Ans. 1. Metals:**

- Metals are malleable, for example, aluminium foil is used for wrapping food.
- Metals are ductile, wires made of copper or aluminium are used in electrical fittings.
- Metals are sonorous, they produce a ringing sound.

- Metals are good conductors of heat, so they are used in making cooking vessels.
- Metals are good conductors of electricity, making them ideal for electrical wires.

**2. Non-metals:**

- Generally non-metals are poor conductor of heat and electricity; for example, sulphur and carbon are used in insulating materials to prevent the transfer of heat or electricity.
- Non-metals are brittle: for example, sulphur and phosphorus are often used in matchsticks as they break easily or react quickly.
- Non-metals are gaseous at room temperature: for example, oxygen is essential for breathing.
- Non-metals are non-lustrous: carbon (as graphite) are used in pencils and dry cell batteries.

**11.** One of the methods of protecting iron from getting rusted is to put a thin coating of zinc metal over it. Since sulfur does not react with water, can it be used for this purpose? Justify your answer.

**Ans.** No, sulphur cannot be used to protect iron from rusting. While sulphur does not react with water, it does not have the property of forming a protective layer over iron like zinc. It cannot prevent air and moisture from coming into contact with the iron.

**12.** An ironsmith heats iron before making tools. Why is heating necessary in this process?

**Ans.** For making tools, a ironsmith first heats a piece of iron until it becomes red-hot. This is because heating makes the iron soft, more malleable and easier to bend, hammer and mould into the desired shape for tool.