

## Exercise

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**1. Which of the following can be beaten into thin sheets?**

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

**Solution:**

Zinc and phosphorus can be beaten into thin sheets.

**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.

**Solution:**

Option (c) is the correct answer.

**3. Fill in the blanks.**

- (a) Phosphorus is a very \_\_\_\_\_ non-metal.
- (b) Metals are \_\_\_\_\_ conductors of heat and \_\_\_\_\_.
- (c) Iron is \_\_\_\_\_ reactive than copper.
- (d) Metals react with acids to produce \_\_\_\_\_ gas.

**Solution:**

- (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.

**4. Mark 'T' if the statement is true and 'F' if it is false.**

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

**Solution:**

- (a) Generally, non-metals react with acids. (F)
- (b) Sodium is a very reactive metal. (T)

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- (c) Copper displaces zinc from zinc sulphate solution. (F)  
(d) Coal can be drawn into wires. (F)

**5. Some properties are listed in the following Table. Distinguish between metals and non-metals on the basis of these properties.**

Properties	Metal	Non-metals
<b>1. Appearance</b>		
<b>2. Hardness</b>		
<b>3. Malleability</b>		
<b>4. Ductility</b>		
<b>5. Heat Conduction</b>		
<b>6. Conduction of Electricity</b>		

**Solution:**

Properties	Metal	Non-metals
1. Appearance	Lustrous	Dull
2. Hardness	Hard	Soft
3. Malleability	Malleable	Not malleable
4. Ductility	Ductile	Not ductile
5. Heat Conduction	Good conductors of heat	Bad conductors of heat
6. Conduction of Electricity	Good conductors of electricity	Bad conductors of electricity

**6. Give reasons for the following.**

- (a) Aluminium foils are used to wrap food items.  
(b) Immersion rods for heating liquids are made up of metallic substances.  
(c) Copper cannot displace zinc from its salt solution.  
(d) Sodium and potassium are stored in kerosene.

**Solution:**

- (a) Aluminium is highly malleable and can be easily beaten in sheets. Aluminium is also soft and does not react with food items. That is why aluminium foils are used to wrap food items.  
(b) Immersion rods are made up of metallic substances because metals are good conductors of heat and electricity. On the passage of electric current they become hot and warm the water.  
(c) The reactivity of copper is less than that of zinc. That is why it cannot displace zinc from its solution.  
(d) Sodium and potassium are highly reactive metals, so they are stored in kerosene.

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**7. Can you store lemon pickle in an aluminium utensil? Explain.**

**Solution:**

No, we cannot store lemon pickle in an aluminium utensil. Aluminium is a metal and reacts readily with acids to produce hydrogen. So, when aluminium comes in contact with lemon, which is acidic, hydrogen will be produced and the pickles will be spoiled.

**8. Match the substances given in Column A with their uses given in Column B.**

A	B
(i) Gold	(a) Thermometers
(ii) Iron	(b) Electric wire
(iii) Aluminium	(c) Wrapping food
(iv) Carbon	(d) Jewellery
(v) Copper	(e) Machinery
(vi) Mercury	(f) Fuel

**Solution:**

A	B
Gold	Jewellery
Iron	Machinery
Aluminium	Wrapping food
Carbon	Fuel
Copper	Electric wire
Mercury	Thermometers

**9. What happens when**

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

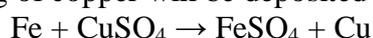
**(b) Iron nails are placed in copper sulphate solution?**

**Write word equations of the reactions involved.**

**Solution:**

(a) No reaction will take place because copper is very less reactive.

(b) Iron is more reactive than copper. So iron will replace copper from its solution and brown coating of copper will be deposited on the iron nails. Also, the blue colour turns green.



**10. 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?**

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**(b) Write down word equations of all the reactions taking place in this process.**

**Solution:**

(a) Saloni can find the nature of the gas by using a wet litmus paper. If the gas turns the blue litmus paper into red, then the gas is acidic in nature whereas if turns the red litmus into blue, it is basic.

(b) Carbon + Oxygen  $\rightarrow$  Carbon dioxide  
 $C + O_2 \rightarrow CO_2$

**11. One day Reeta 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?**

**Solution:**

For polishing, the gold jewellery is dipped into an acidic solution called aqua regia (a mixture of hydrochloric acid and nitric acid). On dipping the gold jewellery in the acid solution, the outer layer of gold dissolves and the inner shiny layer appears. This causes a slight loss in its weight.