

CBSE NCERT Solutions for Class 8 Science Chapter 4

Back of Chapter Questions

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

- (A) Zinc
- (B) Phosphorus
- (C) Sulphur
- (D) Oxygen

Solution: (A)

Zinc

The property of metals by which they can be beaten into thin sheets is called malleability. This is a characteristic property of metals. Zinc is a metal while phosphorus, sulphur and oxygen are nonmetals so they cannot be beaten to form sheets.

Hint: Metals are malleable

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 nonmetals are ductile.

Solution: (C)

Generally, metals are ductile in nature. However, the metal mercury is liquid at room temperature, it is not ductile, and wires cannot be drawn out of mercury, so all metals are not ductile. Nonmetals are not ductile in nature.

Hint: Nonmetals are not ductile in nature

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) reactive.
Phosphorus is a nonmetal. It is highly reactive in nature.
- (B) good, electricity
Metals are good conductors of heat and electricity.
- (C) more
Iron is more reactive than copper.
- (D) hydrogen.
Metals react with acids to produce hydrogen gas.

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

- (A) Generally, oxides of nonmetals 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) False
Generally Non-metallic oxides are acidic in nature and acids react with bases.
- (B) True
Sodium is a very reactive metal.
- (C) False
Zinc is more reactive than copper. In a displacement reaction, the more reactive element displaces the less reactive metal from its salt so 'Copper displaces zinc from zinc sulphate solution' is false as it is not possible.
- (D) False
Coal is naturally occurring in carbon, it is a nonmetal, nonmetals are not ductile so wires cannot be drawn from coal.

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
1. Appearance		
2. Hardness		
3. Malleability		

4. Ductility		
5. Heat conduction		
6. Conduction of electricity		

Solution:

Properties	Metal	Non-metals
1. Appearance	Lustrous	Dull
2. Hardness	Hard	Soft
3. Malleability	Can be beaten into thin sheets	Cannot be beaten into thin sheets
4. Ductility	Can be drawn into wires	Cannot be drawn into wires
5. Heat conduction	Good conductors of heat	Poor conductors of heat
6. Conduction of electricity	Good conductors	Poor 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 foils are used to wrap food items because aluminium metal is malleable. Therefore, it can be beaten into thin sheets or foils.
- (B) Metals are good conductors of heat and electricity. Therefore, immersion rods for heating liquids are made of metallic substances.
- (C) A metal can displace a less reactive metal from its salt in an aqueous solution. But zinc is more reactive than copper. Therefore, copper cannot displace zinc from its salt solution.
- (D) Sodium and potassium are stored in kerosene because they are highly reactive elements. They can easily catch fire even when in contact with air.

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

Solution:

As lemon pickle contains acid, it cannot be stored in metallic vessels because acids readily react with metals and form salt and hydrogen.

Hint: Lemon pickle contains acid.

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 wires
(iii)	Aluminium	(c)	Wrapping food
(iv)	Carbon	(d)	Jewellery
(v)	Copper	(e)	Machinery
(vi)	Mercury	(f)	Fuel

Solution:

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

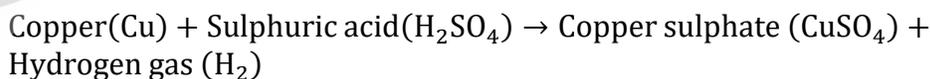
9. What happens when

- (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:

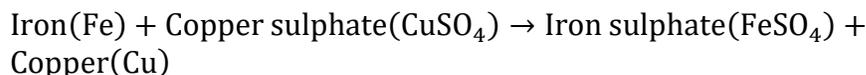
- (A) When dilute sulphuric acid is poured on a copper plate, the copper metal reacts with sulphuric acid to liberate hydrogen gas.



Concept insight:

When acid and base react salt and hydrogen or water is produced.

- (B) Iron being more reactive displaces copper from copper sulphate solution. In this reaction, the blue colour of copper sulphate fades and there is deposition of copper on the iron nail.



Concept Insight:

Iron is more reactive than copper.

10. Saloni took a piece of burning charcoal and collected the gas evolved in a test tube.

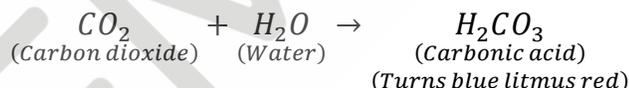
- (A) How will she find the nature of the gas?
 (B) Write down word equations of all the reactions taking place in this process.

Solution:

- (A) Add a few drops of water in the test tube containing gas. Now, cover the test tube and shake it well. After shaking, test the solution with blue litmus and red litmus. It will turn blue litmus red. Thus, the gas is acidic in nature.
 (B) Charcoal reacts with oxygen to form carbon dioxide gas.



Carbon dioxide reacts with water to form carbonic acid, which turns blue litmus paper red.



Concept Insight:

Non-metallic oxides are acidic in nature

11. One day Reeta went to a jeweller's shop with her mother. Her mother gave an old gold jewelry 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:

To polish a gold ornament, it is dipped in a liquid called aqua regia (a mixture of hydrochloric acid and nitric acid). When in contact with aqua regia, the outer layer of gold dissolves and the inner shiny layer appears. The dissolving of the layer causes a reduction in the weight of the jewelry.

