## SHORT ANSWER TYPE QUESTIONS

**1. What is the general name of the elements whose properties are intermediate between those of metals and nonmetals?**

Answer

The general name of the elements whose properties are intermediate between those of metals and nonmetals metalloids.

**2. Name one metal and one nonmetal which exist in the liquid state at room temperature.**

Answer

Metal which is liquid at room temperature is Mercury and non-metal which is liquid at room temperature is Bromine.

**3. Name the property;**

**(a) Which allows metals to be hammered into thin sheets.**

**(b) Which enables metals to be drawn into wires.**

Answer

(a) Malleability

(b) Ductility

**4. Name two metals which are soft and can be easily cut with a knife.**

Answer

The two metals which are soft and can be easily cut with a knife are potassium and sodium.

**5. If a metal coin is dropped on a hard floor, it produces a ringing sound. What is this property of metals known as?**

Answer

If a metal coin is dropped on a hard floor, it produces a ringing sound, this property of metals known as sonorous.

**6. Name the property of iron metal due to which it can be hammered to make objects of different shapes such as an axe, a spade or a shovel.**

Answer

Malleability is the property of iron metal due to which it can be hammered to make objects of different shapes such as an axe, a spade or a shovel

**7. Name a non-metal which is very hard.**

Answer

A non-metal that is very hard is diamond.

**8. Name a non-metal which is a good conductor of electricity?**

Answer

Graphite, the form of carbon is a non-metal which is a good conductor of electricity

**9. State one chemical property which can be used to distinguish a metal from a non-metal.**

Answer

The formation of positive ions by metals is one chemical property that can be used to distinguish a metal from a non-metal.

**10. How do metal oxides differ from non-metal oxides?**

Answer

Metal oxides are basic in nature and turn red litmus blue. For example: Magnesium oxide. Non-metal oxides are acidic or neutral in nature. The acidic oxides turn blue litmus red. For example: Carbon dioxide.

**11. An element forms an oxide which is acidic in nature. State whether the element is a metal or a non-metal?**

Answer

An element which forms an oxide which is acidic in nature is a non-metal. This is because nonmetallic oxides react with water to form acids.

**12. An element forms an oxide which is basic in nature. State whether the element is a metal or a non- metal?**

Answer

An element that forms an oxide which is basic in nature is a metal. This is because metallic oxides are basic in nature and they react with water to form bases.

**13. Write a word equation for the reaction of magnesium with oxygen.**

Answer

Metals react with oxygen in the air to produce metal oxides. For example, magnesium reacts with oxygen to produce magnesium oxide when it is heated in air:

Magnesium + oxygen → Magnesium oxide

$Mg + O2 \rightarrow 2MgO$

**14. Iron metal reacts slowly with the oxygen and moisture of damp air to form rust. State whether the rust formed is acidic, basic, or neutral.**

Answer

Iron metal reacts slowly with the oxygen and moisture of damp air to form rust. Rust is metal oxide hence, it is basic in nature.

**15. Name the gas evolved when a metal reacts with water.**

Answer

The gas evolved when a metal reacts with water is hydrogen gas.

**16. Name the gas evolved when a metal reacts with a dilute acid.**

Answer

The gas evolved when a metal reacts with dilute acid is hydrogen gas.

**17. (a) Name one metal which reacts with dilute hydrochloric acid to produce hydrogen gas.**
**(b)Name one metal which does not react with dilute hydrochloric acid.**
Answer
(a) Sodium
(b) Copper

**18. Which metal is more reactive: iron or zinc?**
Answer
Zinc is more reactive than Iron.

**19. Which metal is less reactive: copper or iron?**
Answer
Copper is less reactive than Iron.

**20. Name any five objects used in our everyday life which are made of metals.**
Answer
Utensils, Pencils, Bottles, Nail cutter, and Wires are the objects used in our everyday life which are made of metals.

**21. Name two metals which are used for making cooking utensils and water boilers for factories.**
Answer
Copper and Iron are the two metals which are used for making cooking utensils and water boilers for factories.

**22. Name two metals which are used for making electric wires.**
Answer
Copper and aluminum are used for making electric wires.

**23. Name the metal which is used in making thermometers.**

Answer

Mercury (Hg) is the metal that is used in making thermometers.

**24. Which metal is used to galvanize iron to protect it from rusting?**

Answer

Zinc metal is used to galvanize iron to protect it from rusting.

**25. Name the metal which is used to make thin foils for packaging medicines, chocolates, and food items, etc.**

Answer

The metal which is used to make thin foils for packaging medicines, chocolates, and food items, etc. is aluminum.

**26. Name two metals which are used to make jewelry.**

Answer

Gold and silver are used to make jewelry.

**27. Where is iron present in our body?**

Answer

The red pigment hemoglobin in blood contains iron in our body.

**28. Name the non-metal which is essential for maintaining life and inhaled during breathing.**

Answer

Oxygen is the non-metal which is essential for maintaining life and inhaled during breathing.

**29. Name one non-metal used for making fertilizers.**

Answer

Phosphorus is the non-metal used for making fertilizers.

**30. Which non-metal is used in the water purification process to make drinking water supply germ-free?**

Answer

Chlorine is the non-metal used in the water purification process to make drinking water supply germ-free.

**31. Name the non-metal used to make purple colored solution which is applied on cuts and wounds as an antiseptic.**

Answer

the non-metal used to make purple colored solution which is applied on cuts and wounds as an antiseptic is Iodine.

**32. Name two non-metals which are used in fireworks (crackers, etc.)**

Answer

Sulfur and sodium are the two non-metals used in fireworks.

**33. Which non-metals is used as a fuel?**

Answer

The non-metal carbon is used as fuel in the form of coal or charcoal.

**34. State whether the following statements are true or false?**

**(a) All metals exist in solid form at room temperature.**

**(b) Coal can be drawn into wires.**

**(c) Non-metals react with dilute acids to produce hydrogen gas.**

**(d) Sodium is a very reactive metal.**

**(e) Copper displaces zinc from a zinc sulfate solution.**

**(f) Rust formed on iron objects is basic in nature.**

**(g) Non-metals react with water to form a gas which burns with a 'pop' sound.**

Answer

(a) True

(b) False

(c) False

(d) True

(e) False

(f) True

(g) False

**35. Fill in the following blanks with suitable words**

**(a) Metals are _____conductors of heat and_____**

**(b) Most non-metals are_____ conductors of heat and electricity.**

**(c) Phosphorous is a very_____ Non-metal.**

**(d) Metals react with acids to produce_____gas.**

**(e) Iron is more_____than copper.**

**(f) Metals form_____oxides whereas non-metals form_____oxide.**

**(g) Sulphur forms……oxide whereas magnesium forms_____oxide.**

**(h) A non-metal is used to make an antiseptic solution called tincture_____**

Answer

(a) Metals are good conductors of heat and electricity

(b) Most non-metals are poor conductors of heat and electricity.

(c) Phosphorous is a very reactive Non-metal.

(d) Metals react with acids to produce hydrogen gas.

(e) Iron is more reactivethan copper.

(f) Metals form basic oxides whereas non-metals form acidic oxide.

(g) Sulphur forms acidic oxide whereas magnesium forms basic oxide.

(h) A non-metal is used to make an antiseptic solution called tincture iodine.

## Short Answer Type Questions

**36. State two physical properties on the basis of which metals can be distinguished from non-metals.**

Answer

Malleability and ductility are the two physical properties on the basis of which metals can be distinguished from non-metals.

**37. Name the gas produced when aluminum foil reacts with: (a) dilute hydrochloric acid. (b) Sodium Hydroxide solution.**

Answer
When aluminum foil reacts with sodium hydroxide, sodium aluminate is formed. Metals react with dilute acids to form metallic salts and hydrogen gas. For example, Aluminium foil reacts with dilute hydrochloric acid to produce aluminum chloride and hydrogen gas.
The balanced chemical equation for the reaction is:

$2Al(s) + 6HCl(aq) \rightarrow 2AlCl3(aq) + 3H2(g)$.

Aluminum is an amphoteric metal. It reacts with both acids and bases. The reaction is highly exothermic and produces a lot of heat. There is a rapid evolution of hydrogen gas during this reaction

**38. State any two physical properties for believing that aluminum is a metal.**

Answer
Aluminum is highly ductile and malleable. It can easily be drawn into wires and drawn into sheets.

**39. Compare the properties of metals and nonmetals with respect to: (i) malleability (ii) ductility and (iii) conduction of heat and electricity**

Answer
(i) The property of metals that allows metals to be hammered into thin sheets is called Malleability. Non-metals do not possess this property.

(ii) The property of metals which enables them to be drawn into wires is called ductility. Non-metals do not possess this property.

(iii) Metals have free electrons which makes them good conductors of heat and electricity. Non- metals do not have free electrons, hence, they are nonconductors of heat and electricity.

**40. Give a reason why.**

**(a) Copper metals used for making electric wires.**

**(b) Graphite is used for making electrodes in a cell.**

**(c) Immersion rods for heating liquids are made of metallic substances.**

Answer
(a) Copper metal is used for making electric wires because it is highly ductile in nature. It is a good conductor of electricity.

(b) Graphite is made of carbon. Its valence electrons are free to move. As a result, graphite is able to conduct electricity which makes it useful for making an electrode in a cell.

(c) Immersion rods for heating liquids are made of metallic substances because metallic substances are good conductors of electricity and heat.

**41. Define (a) malleability, and (b) ductility.**

Answer

(a) The property of metals that allows metals to be hammered into thin sheets is called Malleability. Non-metals do not possess this property.

(b) The property of metals which enables them to be drawn into wires is called ductility. Non-metals do not possess this property.

**42. What is meant by saying that metals are: (i) Malleable (ii) Ductile (iii) Lustrous and (iv) Sonorous**

Answer

i) Malleable: This means that metals can be beaten into thin sheets with a hammer. The property which allows the metals to be hammered into thin sheets is called malleability.

Aluminum metal can be hammered to form aluminum foils.

(ii) Ductile: This means that metals can be drawn (or stretched) into thin wires. The property which allows the metals to be drawn into thin wires is called ductility.

Copper metal can be drawn into thin copper wires (used as electric wires).

(iii) Lustrous: This means that metals have a shiny appearance. The shiny appearance of the metals is called metallic luster.

Gold metal is used for making jewelry because of its shiny luster.

(iv) Sonorous: This means that metals make a ringing sound when we strike them. The property by virtue of which metals make a ringing sound is called sonority.

Metal sheets are used for making bicycle bells and temple bells.

**43. There are two boxes, one made of metal and the other made of wood, which are similar in appearance. How will you find out which box is made of metal?**

Answer
The box can be hit hard and the box which produces sonorous sound is considered as the metal box. This means that metals make a ringing sound when we strike them. The property by virtue of which metals make a ringing sound is called sonority.

**44. Consider the following materials: Copper, Sulphur, Phosphorus, Carbon (such as pencil lead), Gold, Silver: Which of these materials are: Malleable and ductile; and brittle.**

Answer
Malleable and ductile: Copper, Gold and silver

Brittle: Sulphur, Phosphorus and Carbon

**45. Can you hold a hot metallic pan which is without a plastic or a wooden handle? Give the reason for your answer.**

Answer
We can hold a hot metallic pan with wooden handle as wood is a poor conductor of heat and will not cause damage to the person holding it.

**46. The screwdriver used by an electrician has a plastic or wooden handle. Why?**

Answer
The screwdriver used by the electrician has a plastic or a wooden handle because the front portion of the screwdriver is made up of iron which is a good conductor of heat and electricity, so to prevent electric shock the handles are made of nonmetals such wood and plastic as they are insulator.

**47. What is the nature (acidic/basic) of the following oxides? (a) Magnesium oxide (b) Sulphur dioxide Given the reason for your choice.**

Answer

Magnesium is a metal. Metals react with oxygen to form metallic oxides. Hence, Magnesium oxides are basic in nature. On the other hand, nonmetals react with oxygen to form nonmetallic oxides. These oxides differ from metallic oxides because they are acidic in nature. Nonmetallic oxides react with water to form acids. Therefore, Sulphur dioxide is acidic in nature. Magnesium oxide is basic in nature.

**48. What type of oxides are formed: (a) when metals combine with oxygen? (b) when non-metals combine with oxygen?**

Answer

(a) Metals react with oxygen to form metallic oxides.

(b) Nonmetals react with oxygen to form nonmetallic oxides.

**49. Element A is soft, brittle, and does not conduct electricity. Element B is hard, malleable, and 'ductile; and also conducts electricity. Which of the two elements, A or B, is a non-metal?**

Answer

Element A is non-metal as it is soft and brittle. Also mentioned it does not conduct electricity.
Element B is metal as it is malleable and ductile. Also mentioned it conducts electricity.

**50. Consider the following elements: Sodium, Sulphur, Carbon, Magnesium Which of these elements will form: (a) acidic oxides. (b) Basic oxides.**

Answer

(a) Acidic oxides: Carbon and sulfur. Nonmetals react with oxygen to form nonmetallic oxides.

(b) Basic oxides: Sodium and magnesium. Metals react with oxygen to form metallic oxides.