



# SHIKSHA CLASSES

Sub. : Science  
Std. : VIII<sup>th</sup> - S.B.

**Answer Paper**  
**7. Metals and Nonmetals**

Marks : 20

**Q.1(A) : Choose the correct alternative**

2

1) Carat gold is gold of ..... purity.

Ans : b) 91.66%

2) Metalloids have properties of .....

Ans : c) both metals and non-metals

**Q.1(B) : Solve any one of the following question**

1

1) Identify the odd term

Brass, Bronze, Iron, Steel

Ans : Iron

2) Define Corrosion.

Ans : Gases in the air react with metals in presence of moisture to form metal compounds on its surface

this destroys the metal gradually and is called as corrosion.

3) Write the electronic configuration of Oxygen.

Ans : The electronic configuration of Oxygen is 2, 6

**Q.2(A) : Give reason (Any One)**

2

1) The stainless steel vessels in kitchen have copper coating on the bottom.

Ans : 1) Stainless steel is an alloy of iron ; with carbon, chromium and nickel.

2) The conductivity of copper is higher than that of iron in steel. Copper heats uniformly and faster. The time for cooking is reduced, as a result it saves fuel. Hence, the stainless steel vessels in kitchen have copper coating on the bottom.

2) Sodium metal is kept in kerosene.

Ans : 1) Sodium reacts so vigorously with atmospheric oxygen and water that it catches fire if kept in the open.

- 2) It does not react with kerosene and sinks in it. Hence, to protect sodium and to prevent accidental fires it is always kept in kerosene.

**Q.2(B): Solve any two of the following question.**

4

**1) What are the metals that make the alloys brass and bronze?**

**Ans :** The alloy brass is formed from copper and zinc and the alloy bronze is formed from copper and tin.

**2) What is done to prevent corrosion of metals?**

**Ans :** By applying a layer of paint, oil, grease or varnish on the surface of a metal to prevent corrosion. Also plating with noncorroding metal is done. Iron is coated with thin layer of zinc. Due to these processes the contact of metal surface with air is lost and corrosion is prevented.

**3) Define Alloy.**

**Ans :** A homogeneous mixture of two or more metals or a homogeneous mixture of metal with non metals is called as alloy,

**4) What are the uses of noble metals?**

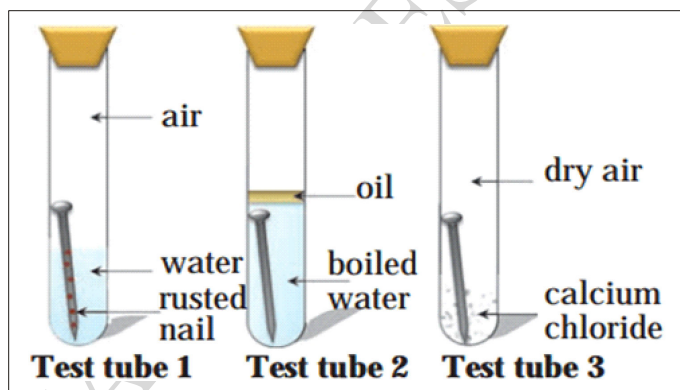
**Ans :** **Uses of Noble Metals:**

- 1) Gold, silver and platinum are used to prepare ornaments.
- 2) Silver is used in medicines. (It has antibacterial property).
- 3) Gold and silver are also used to make metals and few electronic devices.
- 4) Platinum, palladium metals are used as catalyst.

**Q.3 : Solve any two of the following question.**

6

**1) Three experiments to study the process of rusting are given below. Observe the three test tubes and answer the following questions.**



- i) Why the nail in the test tube 2 is not rusted?
- ii) Why is the nail in the test tube 1 is rusted highly?
- iii) Would the nail in the test tube 3 get rusted?

**Ans :** 1) In the test tube 2, oil cuts the supply of air to nail due to which oxidation of nail is prevented and boiled water is free from gases. Hence, the nail in the test tube 2 is not rusted.

2) The nail in the test tube 1 is highly rusted because nail is in contact with water and air. The oxidation process is fast.

3) No change is observed in the test tube 3. Nail remains as it is because the calcium chloride absorbs moisture, making the air dry, thus preventing rusting of the nail.

**2) Define the following:**

**a) Ductility      b) Malleability      c) Metalloids**

**Ans :** **a) Ductility :** The property due to which a substance can be drawn into a thin wire is called ductility.

**b) Malleability:** The property due to which a substance can be hammered into a thin sheet is called malleability.

**c) Metalloids :** The element which shows the properties of metals as well as those of non-metals is called a metalloid.

**3) Write the difference between metal and nonmetal.**

**Ans : Metals:**

- 1) Metals have a lustre.
- 2) Metals are malleable. They can be beaten into thin sheets.
- 3) Metals are ductile. They can be drawn into wires.
- 4) They are good conductors of heat and electricity.
5. At ordinary temperature, metals are generally solid. (Exception: Mercury is liquid.)
- 6) Metals usually have high density.

**Non-metals:**

- 1) Non-metals lack lustre.
- 2) As non-metals are brittle, they are not malleable.
- 3) They are not ductile.
- 4) Non-metals are poor conductors of heat and electricity.
- 5) At ordinary temperature, non-metals are in the solid or gaseous state. (Exception: Bromine is liquid.)
- 6) Non-metals have low density in the solid state.

**4) Write the uses of metals and nonmetals**

**Ans : Use of metals:**

- i) To make cooking wares.
- ii) In making electric appliances, electric wires, fridge etc.
- iii) Sheets of aluminium and iron for buildings materials.
- iv) In manufacturing jewellery from gold, silver, coins and from copper, aluminium etc.

**Uses of Noble Metals:**

- i) Gold, silver and platinum are used to prepare ornaments.
- ii) Silver is used in medicines. (It has antibacterial property).
- iii) Gold and silver are also used to make metals and few electronic devices.
- iv) Platinum, palladium metals are used as catalyst.

**Q.4 : Solve any One of the following question.**

5

**1) Explain the formation of ions in metals and non metals with example.**

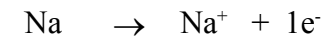
**Ans : Formation of ions in metals:**

Metals have a tendency to lose their valence electrons to form positively charged ions that is cation

**Example :**

Sodium metal having electronic configuration as 2,8,1

To form the octet sodium loses one electron from the valence shell and form a positive ion



(2,8,1)            (2,8)

Sodium        Sodium ion

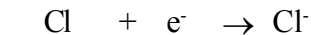
**Formation of ions in Non metals:**

Non metals have a tendency to accept electrons in their valence shell to form negatively charged ions called anions.

**Example :**

Chlorine having electronic configuration as 2,8,7

To form the octet Chlorine accept one electron in the valence shell and form a negative ion.



(2,8,7)                            (2,8,8)

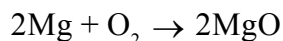
Chlorine                            Chlorine ion

**2) Write the chemical properties of metals.**

**Ans : Chemical Properties of Metals**

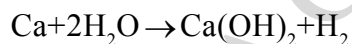
**1. Metals react with oxygen to form metal oxides.**

**Example:**



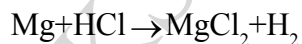
**2. Metals react with water to form hydroxides.**

**Example:**



**3. Metals react with acids to form salt and hydrogen gas.**

**Example:**



\* \* \*

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