

# Class – 7

## Sub. – Chemistry

### Chapter – 6

#### Metals and non-metals

##### Short answer questions.

**Question 1.** Name any ten metals.

**Answer.** Sodium, Potassium, Calcium, Gold, silver, Aluminium, zinc, Copper, magnesium, iron.

**Question 2.** Metals have high tensile strength. Explain. Also, You one example of how this property of metals is used.

**Answer.** Metals have high tensile strength means they are strong enough to bear heavy loads. It is the tensile strength of iron that makes a bridge able to withstand high pressures.

**Question 3.** Why can't you

**A. Draw wires from a piece of sulfur or coal?**

**Answer.** Sulphur or coal, being a non metal does not have the property, ductility.

**B. Use nylon or jute ropes for electrical transmission?**

**Answer.** Because they are bad conductors of electricity.

**C. Use a cooking utensil made of carbon?**

**Answer.** Because carbon is a non metal and it has low melting point.

**Question 4.** Name five non-metals, which are gaseous at ordinary temperatures.

**Answer.** Carbon, Oxygen, Nitrogen, Hydrogen, Chlorine.

**Question 5.** Mention three uses of iron.

**Answer. 1.** It is used in the construction of buildings.

**2.** Iron coated with tin is used to make cars.

**3.** Galvanized iron and is used to make pipes and sheets.

**Question 6.** Mention 3 uses of aluminium.

**Answer. 1.** It is used in making utensils.

**2.** Aluminium paint is used on iron objects to prevent rusting.

**3.** It is used in making foils and packaging food and medicines.

**Question 7.** Define an alloy.

**Answer.** A homogeneous mixture of a metal with other metals or non metals is called an alloy.

**Question 8.** What do you mean by corrosion of metals?

**Answer.** The slow destruction of a metal or an alloy by chemical action is called corrosion.

**Question 9.** Give the word equation for rusting.

**Answer.** Iron + Oxygen + water → rust

**Question 10.** What is possibly the reason why the Iron pillar of Delhi has not rusted yet?

**Answers.** Because it is made up of pure iron.

**Question 11.** What are metalloids? Name a few.

**Answer.** The elements which have properties intermediate between those of metals and nonmetals are called metalloids.

Examples. Boron, silicon, germanium, arsenic, antimony.

**Long answer questions.**

**Question 1.** Mention any five physical characteristics of metals.

**Answer.** 1. Metals are good conductor of heat.

2. Metals are ductile.

3. Metals are malleable.

4. Metals are sonorous.

5. Metals have high density.

**Question 2.** What are the physical properties of nonmetals?

**Answer.** 1. Solid nonmetals are hard and have low tensile strength.

2. Non-metals are non sonorous.

3. Non metals have low densities.

4. Nonmetals are bad conductors of electricity.

5. Solid nonmetals are not ductile.

**Question 3.** Describe an activity to show that the lid of a pencil conducts electricity, but a piece of sulphur does not.

**Answer.** Sharpen a small pencil at both ends, and connect the two naked ends of the 'lead' to the circuit. 'lead' of the pencil conducts electricity. The lead of a pencil is made of a mixture of clay and graphite, and graphite (a form of

carbon) is a good conductor of electricity but if in the place of lead, we put sulphur which is a non-metals will not make the bulb to glow. This shows that piece of sulphur does not conduct electricity.

**Question 4.** Describe three methods to prevent rusting.

**Answer.** 1. Painting – Applying a paint protects the metal from the chemical action of air or a solution.

2. Greasing – Applying grease over the iron surface protects the iron from rust.

3. Electroplating – It also prevented the metal from rust or corrosion.

**Question 5.** Describe an experiment to prove that rusting takes place only in moist air.

**Answer.** Take three test-tubes. Place clean iron nails in each test-tube.

- Pour some water in test-tube-1, cork it.
- Pour water in test-tube-2, add some oil and cork it.
- Put some anhydrous calcium chloride in test-tube-3 and cork it.

After 2-3 days we observe that the nails in test-tube 1 rust because they are exposed to air and water both, while nail in test-tube 2 and 3 do not rust. This shows rusting of iron takes place in the presence of air and moisture both.

### **Objective questions.**

#### **Choose the correct option.**

1. Which of the following is a liquid at ordinary temperatures?  
Answer. D. Bromine.
2. Which of the following is a solid nonmetal?  
Answer. C. Phosphorus
3. Which of the following is a soft metal?  
Answer. B. Sodium
4. Which of the following is the best conductor of electricity?  
Answer. A. Silver
5. Which of the following metals is used for shielding against X Rays?  
Answer. C. Lead.

Match columns A and B.

1.

A

- (i) Sulphur
- (ii) Iodine
- (iii) Nitrogen
- (iv) Aluminium

B

- (a) a gas (iii)
- (b) a good conductor of electricity (iv)
- (c) a yellow solid (i)
- (d) a lustrous nonmetal (ii)

2.

A

- (i) Iron
- (ii) Magnesium
- (iii) Copper
- (iv) Lead

B

- (a) red metal (iii)
- (b) used in storage batteries (iv)
- (c) used in fireworks (ii)
- (d) rusts (i)

**Fill in the blanks.**

1. Graphite and **iodine** are lustrous nonmetals.
2. All **metals** are good conductors of heat and electricity.
3. The so-called lead of a pencil is made of **graphite** and **clay**.
4. Though a metal, mercury is a **liquid** at ordinary temperature.
5. In galvanizing, a thin layer of **zinc** forms on the surface of a metal.
6. Lead is **poisonous** for humans.

**Write T true and F for false for the following statements.**

1. Under ordinary conditions, bromine is a liquid. **T**
2. Iodine is lustrous as well as a good conductor of electricity. **F**
3. Graphite is a form of carbon. **T**
4. Diamond, though a non-metal, is the hardest substance known. **T**
5. Copper, on corrosion, gives a red solid. **F**
6. Rust has the formula  $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$ . **T**
7. Depositing a layer of tin over an iron object is called galvanizing. **F**
8. Stainless steel is an alloy. **T**
9. Rusting does not take place in dry air. **T**
10. Quicklime absorbs moisture. **T**