EXERCISE

1. Name a metal

1. that is most malleable : **Pure gold**
2. that is brittle : **Zinc**
3. as precious as gold : **Platinum**
4. that can be cut with knife : **Sodium**
5. used in making electric cables : **Copper**
6. used as a thermometric liquid : **Mercury**
7. that is the best conductor of electricity : **Silver**

2. Name a non-metal that is :

1. a good conductor of heat and electricity : **Graphite (Carbon)**
2. hardest naturally occurring substance : **Diamond (Carbon)**
3. used to kill germs in water : **Chlorine**
4. lustrous : **Iodine**
5. used for filling into electric bulbs : **Argon**
6. used for cancer therapy : **Radon**
7. liquid at room temperature : **Bromine**

3. Mention two uses of the following metals and non-metals

(a) Iron :
It is used to make pipes, tanks, railing, etc.
It is used in the construction of power transmission towers.

(b) Aluminium :
It is used to make electric wires.
It is used to make utensils, cans, window fram'es, etc.

(c) Gold :
It is used for making ornaments and coins.
It is used in the manufacture of electronic devices like computers, telephones, home appliances, etc.

(d) Oxygen :
It is used by all living beings for breathing.
It is important for combustion.

(e) Iodine :
It is used in photographic films in the form of potassium iodide.
It is added to salt to make it iodized salt which is necessary for the growth of human body.

4. Give reasons :

(a) Magnesium is used in fire works.
Ans : Magnesium is used in fire works because it burns with a dazzling light.

(b) Aluminium is used in making aircrafts.
Ans : Aluminium is used in making aircrafts because it is light and strong. It is mixed with other metals to make it stronger.

(c) Copper is used in making electric cables.
Ans : Copper is ductile and a very good conductor of heat and electricity. This is the reason that copper is used in making electric cables.

(d) Graphite is used in the leads of pencils
Ans : Graphite turns paper black that is why it is used in the leads of pencils.

(e) Impure diamond is used to cut glass
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(f) Gold is mixed with copper and nickel.
Ans : Pure gold is a very soft metal. It cannot be moulded into ornaments so it is mixed with copper and nickel so that it becomes harder and bit cheaper also.

(g) Tungsten is used in electric bulbs.
Ans : It is a shiny grey metal. in solid state at room temperature. It can withstand high temperature because it has highest melting point among metals. Hence, it is used in electric bulbs.

5. Name the metals present in the following alloys

1. **Brass—** Copper and zinc
2. **Bronze—** Copper and tin
3. **Duralumin—** Aluminium and copper
4. **Stainless steel—** Iron, chromium, nickel

6. Give four differences between metals and non-metals with reference to their
(a) Melting point and boiling point,
(b) Conductivity of heat and electricity,

(c) Malleability
(d) Solubility

	Metals	Non-metals
Melting point and boiling point	Metals have both high high melting point and boiling point.	Non-metals have both low melting and low boiling point.
Conducti-vity of heat and electricity	They are good conductors of heat and electricity.	Nofi-metals are bad conductors of heat and electricity.
Malleabi-lity	Metals are ususally malleable.	All non-metal are non-malleable.
Solubility	Metals are generally insoluble in water and other organic solvents.	They are both soluble and insoluble

7. What are metalloids?
Ans : Metalloids are the elements which show some properties of metals and some properties of non-metals. They all are solids. They are silicon, boron, arsenic, antimony, germanium, tellurium and polonium.

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8. Give two uses of

(a) Silicon :

- Highly pure silicon is used in making microchips for computers, transistors, solar cells, rectifiers and other solid state devices that are used extensively in the electronic and present space age industries.
- It is used in the manufacture of a waterproof material called "silicone". Silicone is used to make bags, umbrellas, raincoats, etc.
- It is an important substance present in steel, an alloy of carbon.

(b) Antimony :

- Antimony is used in electric industry to make semiconductor devices.
- It is alloyed with lead to improve its hardness and strength and is used in batteries.

- It is also used in printing presses as type metal.

(c) Tungsten :

- It is used in making electrodes.
- It is used in heating elements.
- It is used as filaments in electric bulbs and cathode ray tubes.

(d) Germanium:

- Germanium is used as a semiconductor.
- It is used as a transistor in many electronic applications when mixed with arsenic, gallium, antiomony, etc.
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OBJECTIVE TYPE QUESTIONS

1. Fill in the blanks :

(a) The most ductile metal is **silver.**
(b) A metal stored in kerosene oil is **sodium.**
(c) Tungsten metal is a poor conductor of **heat.**
(d) **Pure gold** is a soft metal.
(e) **Silicon carbide** is the hardest compound known to us.
(f) A non-metal used to purify water is **phosphorus**.
(g) A metal that gives dazzling effect to crackers when they explode is **magnesium.**
(h) A chemical compound that makes up the striking heads of match sticks is **sulphur**.

2. Match the following :

Column A	**Column B**
(a) Helium	**(1) Electric bulb**
(b) Neon	**(2) Thermometer**
(c) Argon	**(3) Semiconductor**
(d) Germanium	**(4) Weather balloons**
(e) Mercury	**(5) Advertising signboards**

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(b) Neon	(5) Advertising signboards
(c) Argon	(1) Electric bulb
(d) Germanium	(3) Semiconductor
(e) Mercury	(2) Thermometer

3. Write 'true' or 'false' for the following statements :

3. State two important uses of following metals :

(a) Uses of gold :

- It is used for making jewellery and coins.
- It is used in dentistry for filling cavities in teeth

(b) Uses of silver :

- It is used for making coins and ornaments.
- It is used for making high quality glass mirrors.

(c) Uses of copper :

- It is used for making electric transmission wires.
- It is used for making utensils.

(d) Uses of iron :

- It is used in the construction of buildings.
- It is used in the construction of automobiles, railway bridges and many kinds of machines.

(e) Uses of tin :

- It is used for tinning food cans and the cooking vessels made from copper or iron.
- It is used for making alloys, such as brass and bronze.

(f) Uses of zinc :

- It is used for galvanizing iron sheets to prevent iron from rusting.
- It is used for making alloys such as brass and bronze.

(g) Uses of aluminium :

- Aluminium foils are used for packing food stuff, medicines etc.
- It is used for making high voltage electric transmission wires.

(h) Uses of lead :

- It is used for making lead acid batteries used in all kinds of automobiles.
- It is used for making sanitary pipes.

(i) Uses of magnesium :

- It bums with dazzling white flame and hence is used in fire works.
- It is used in the making of alloys, such as magnalium. This alloy is used in making frame of aeroplanes.

(j) Uses of mercury :

- It is used as a thermometric liquid in laboratory as well as clinical thermometers.
- Gold amalgam and silver amalgam are used in dentistry for filling tooth cavities.

h the following items given in Column 'A' with that in Column 'B':

Column 'A'	Column 'B'
Zinc	Non-metal
iodine	Mercury
Liquid	Carbon
Graphite	Silver
Silicon	Water purification
Malleability	Metalloid
Chlorine	Bad conductor of heat
Non-metal	Metal

Answer:

Column 'A'	Column 'B'
Zinc	Metal
iodine	Non-metal
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