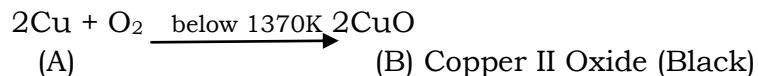


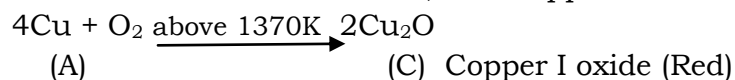
VI. Short answer questions:

1. A is a reddish brown metal, which combines with O₂ at <1370K gives B, a black coloured compound. At a temperature >1370K, A gives C with is red in colour. Find A, B and C with reaction.

Ans: * Since A is a reddish brown metal, A is copper.
 * Copper reacts with O₂ below 1370K to form copper II oxide which is black. Therefore, B is copper II oxide.



* Copper reacts with O₂ above 1370K to form copper I oxide which is red. Therefore, C is Copper I oxide

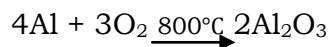


Compound	Name
A	Copper (Cu)
B	Copper II Oxide (CuO)
C	Copper I Oxide (Cu ₂ O)

2. A is a silvery white metal. A combines with O₂ to form B at 800°C, the alloy of A is used in making the aircraft. Find A and B.

Ans: * Since A is a silvery white metal and its alloy is used in making aircraft, A is aluminium.

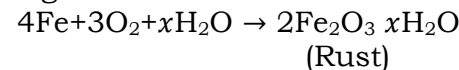
* Aluminium reacts with O₂ at 800°C to form aluminium oxide, B is aluminium oxide.



Compound	Name
A	Aluminium (Al)
B	Aluminium Oxide (Al ₂ O ₃)

3. What is rust? Give the equation for formation of rust.

Ans: When iron is exposed to moist air, it forms a layer of brown hydrated ferric oxide on its surface. This compound is known as rust and the phenomenon of formation of rust is known as rusting.



4. State two conditions necessary for rusting of iron

Ans: Two conditions necessary for rusting of iron

- Presence of water (Moisture)
- Presence of Oxygen (air)

VII. Long Answer Questions:

1. a) State the reason for addition of caustic alkali to bauxite ore during purification of bauxite.

Ans: Caustic alkali is added to bauxite to obtain sodium meta aluminate, which on dilution with water gives aluminium hydroxide precipitate.

b) Along with cryolite and alumina, another substance is added to the electrolyte mixture.

Ans: i) Along with alumina and cryolite, the other substance added is fluorspar.

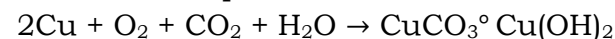
ii) The reason for adding fluorspar is that it lowers the fusion temperature of the electrolyte.

2. The electronic configuration of metal A is 2, 8, 18, 1. The metal A when exposed to air and moisture forms B, a green layered compound. A with conc.H₂SO₄ forms C and D along with water. D is a gaseous compound. Find A, B C and D.

Ans: i) Since the electronic configuration of metal A is 2,8,18,1 its atomic number is 29. Hence, Metal A is copper.

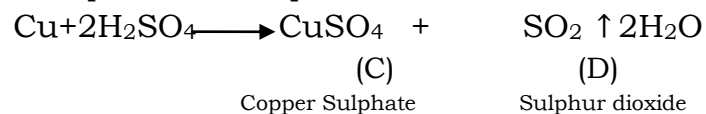
* Action of Air and Moisture:

Copper gets covered with a green layer of Basic Copper carbonate in the presence of CO₂ and moisture.



(A) (B)
 Copper Basic Copper Carbonate
 (Malachite green)

* Copper reacts with conc. H_2SO_4 to form Copper Sulphate and Sulphur dioxide.



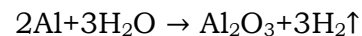
Compound	Molecular formula	Name
A	Cu	Copper
B	$\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$	Malachite Green
C	CuSO_4	Copper Sulphate
D	SO_2	Sulphurdioxide

VIII. HOT QUESTIONS:

1. Metal A belongs to period 3 and group 13. A in red hot condition reacts with steam to form B. A with strong alkali forms C. Find A, B and C with its reactions.

Ans: * Since metal A belongs to period 3 and group 13, it is aluminium.

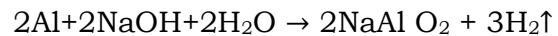
* Aluminium in red hot condition reacts with steam to form aluminium oxide and hydrogen gas. Hence B is aluminium oxide.



(A) (B)

Aluminium Aluminium Oxide

* Aluminium reacts with strong alkali to form sodium meta aluminate. Hence C is sodium meta aluminate.



(A) (C)

Sodium meta aluminate

Compound	Name
A	Aluminium (Al)
B	Aluminium Oxide (Al_2O_3)
C	Sodium Meta Aluminate (NaAlO_2)