

LONG ANSWER TYPE QUESTION:

Q.1 Give reason for the following:

(a) Sodium metal is kept immersed in kerosene?

Ans: Sodium metal is so reactive that it reacts vigorously with the oxygen (of air). It catches fire and start burning when kept open in the air. Sodium metal is stored under kerosene oil to prevent its reaction with oxygen, moisture and CO_2 of air.

(b) Blue color of copper sulphate solution disappears when some aluminum powder is added in it?

Ans: When aluminum powder is put in copper sulphate solution, then the blue color of copper sulphate solution.



Since Al is more reactive than Cu, it displaces Cu from CuSO_4 solutions and forms colorless $\text{Al}_2(\text{SO}_4)_3$.

Q.2. List four important properties of aluminum which are responsible for its great demand in industry?

Ans: **Important properties of Aluminum**

- I. It is a light metal.
- II. It does not corrode as it forms a protective layer of oxide which prevents it from further oxidation.
- III. It is a good conductor of heat and electricity.
- IV. It is used as a reducing agent in the extraction of metals from the oxide.

Q.3. Define activity series of metals: -

(a) Arrange the metals gold, copper, iron and magnesium in order of their increase in reactivity

Ans: $Au < Cu < Fe < Mg$ is increasing order of reactivity.

(b) (i) Some zinc pieces are put in copper sulphate solution

Ans: The blue solution will become colorless and reddish-brown copper metal will be deposited.



(ii) Some silver pieces are put into green colored ferrous sulphate solution.

Ans: $\text{Ag(s)} + \text{FeSO}_4(\text{aq}) \rightarrow$ No reaction

Reaction will not take place because Ag is less reactive than iron.

Q.4. Define the following:

(a) Minerals

(b) Ores

(c) Gangue

(a) Minerals: Minerals are compounds (also known as elements) which are found naturally in the earth's crust.

E.g. Alums $\text{K}_2\text{SO}_4 \cdot \text{Al}_2(\text{SO}_4)_3 \cdot 2\text{H}_2\text{O}$

(b) Ores: Ores are minerals from which metal can be extracted. E.g. Bauxite $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ is the ore of Al, copper pyrite CuFeS_2 . All minerals are not considered as ores but all ores are also minerals.

(c) Gangue: Ores mined from the earth are naturally contaminated with sand, rocky materials. There are impurities present in the ore which are known as gangue.

Q.5. Explain any 3 methods used for preventing corrosion of metals?

(a) Alloying: Mixing of the metal with another metal or non-metal can help in preventing corrosion of metals.

E.g. Alloying iron with carbon to form steel.

(b) Electroplating: Plating a layer of chromium over the surface of metal can help in the preventing metals from getting corroded.

(c) Galvanization: Iron metals is dipped in molten zinc, which forms a layer of zinc over Iron.