

**Q1. Mcq**

1. The salt which in soln. gives a pale green precipitate with NaOH solution and a white ppt. with BaCl<sub>2</sub> soln. is :

- a) Iron [III] sulphate
- b) Iron [II] sulphate
- c) Iron [II] chloride
- d) Iron [III] chloride

2. Hydroxide of this metal is soluble in NaOH solution.

- a) Magnesium
- b) Lead
- c) Silver
- d) Copper

3. Hydroxide of this metal is soluble in NaOH solution.

- a) Magnesium
- b) Lead
- c) Silver
- d) Copper

4. The salt solution which does not react with ammonium hydroxide is :

- a) Calcium nitrate
- b) Zinc nitrate
- c) Lead nitrate
- d) Copper nitrate

**Q2. Action of Alkalis — on certain metals**

- (a) Zinc  $Zn + NaOH \rightarrow \dots + \dots$
- (b) Zinc  $Zn + KOH \rightarrow \dots + \dots$
- (c) Lead  $Pb + NaOH \rightarrow \dots + \dots$
- (d) Lead  $Pb + KOH \rightarrow \dots + \dots$
- (e) Aluminium  $Al + NaOH + H_2O \rightarrow \dots + \dots$
- (f) Aluminium  $Al + KOH + H_2O \rightarrow \dots + \dots$

**Q3. Action of Alkalis — on oxides and hydroxides of certain metals**

- (a) Zinc oxide  $ZnO + NaOH \rightarrow \dots + \dots$
- (b) Zinc hydroxide  $Zn(OH)_2 + NaOH \rightarrow \dots + \dots$
- (c) Lead [II] oxide  $PbO + NaOH \rightarrow \dots + \dots$
- (d) Lead hydroxide  $Pb(OH)_2 + NaOH \rightarrow \dots + \dots$
- (e) Aluminium oxide  $Al_2O_3 + NaOH \rightarrow \dots + \dots$
- (f) Aluminium hydroxide  $Al(OH)_3 + KOH \rightarrow \dots + \dots$

**Q4. Sodium hydroxide solution is added first in a small amount, then in excess to the aqueous salt solutions of:**

- a) copper [II] sulphate
- b) zinc nitrate
- c) lead nitrate
- d) iron [III] sulphate

**State in each case :**

- (i) the colour of the precipitate when NaOH is added in a small quantity;
- (ii) the nature of the precipitate [i.e. soluble or insoluble] when NaOH is added in excess.

**Q5. The questions below refer to the following salt solutions listed A to F:**

A: Copper nitrate

B: Iron [II] sulphate

C: Iron [III] chloride

D: Lead nitrate

E: Magnesium sulphate

F: Zinc chloride

- (i) Which soln. becomes a deep/inky blue colour when excess of ammonium hydroxide is added to it.
- (ii) Which solution gives a white precipitate with excess ammonium hydroxide solution.

**Q6. Write a balanced equation for the reaction between aluminium oxide and sodium hydroxide solution.**

**Q7. Give one test to distinguish between the following:  
Iron [III] chloride soln. and Copper chloride soln.**

**Q8. Copper [II] sulphate solution reacts with NaOH solution to form a precipitate of  $\text{Cu}(\text{OH})_2$ . State its colour.**

**Q9. State one relevant observation : Lead nitrate solution is treated with sodium hydroxide soln. drop wise, till it is in excess.**

**Q10. State your observation: When excess sodium hydroxide is added to calcium nitrate solution.**