Deccan International School

ANALYTICAL CHEMISTRY MCQs

1. A colourless metallic oxide which dissolves in alkalis to yield colourless solutions

a) NaO

b) K_2O

c) PbO

d) PbO_2

2. A colourless cation which is not a representative element

a) Au^{3+}

b) Pt^{4+}

c) Sn^{4+}

d) NH^{4+}

3. Name the colourless solution formed when zinc hydroxide reacts with ammonium hydroxide

a) Tetramine copper hydroxide

b) Tetramine zinc hydroxide

c) Ammonium zincate

d) Sodium zincate

4. Identify the hydroxide soluble in NaOH solution

a) Calcium hydroxide

b) Copper hydroxide

c) Ferric hydroxide

d) Zinc hydroxide

5.One of the products obtained when lead nitrate solution reacts with sodium hydroxide is lead hydroxide. The other product will be

a) Sodium nitrite

b) Sodium oxide

c) Sodium plumbite

d) Sodium nitrate

6. A metal oxide which produces salt and water on reaction with alkali as well as with acid is

a) ZnO

b) FeO

c) MgO

d) CuO

7. Identify the cation in the following case:

Sodium hydroxide when added to solution 'A' gives reddish brown precipitate.

a) Fe^{3+}

b) Fe^{2+}

c) Pb^{2+}

d) Ca^{2+}

8.Aluminium reacts with fused sodium hydroxide to produce_____

a) Sodium meta-aluminate

b) Potassium meta-aluminate

c) Sodium aluminate

d) Sodium zincate

9. The precipitate of which of the following ions dissolves in excess NH_4OH solution to give an inky blue solution.

a) Fe^{2+}

b) Fe^{3+}

c) Cu^{2+}

d) Zn^{2+}

10. Which of the following anion is colourless?

a) MnO_4

b) Cr_2O_7

c) So_4^{2-}

d) CrO_4^{2-}

11. State the ion of the salt which is soluble in excess of NaOH but insoluble in excess of NH_4OH.

a) Ca^{2+}

b) Mg^{2+}

c) Pb^{2+}

d) Cu^{2+}

12.State the observation when ammonium hydroxide is added to ferric chloride

a) **Reddish brown ppt. formed which is insoluble in excess ammonium hydroxide**

b) **Reddish brown ppt. formed which is soluble excess of ammonium hydroxide.**

c) **Dirty green precipitate formed which is insoluble in excess of ammonium hydroxide**

d) **Dirty green precipitate formed which is soluble in excess of ammonium hydroxide**

13. The precipitate formed when calcium nitrate reacts with NaOH solution

a) **Calcium hydroxide**

b) **Calcium sulphate**

c) **Calcium oxide**

d) **Calcium chloride**

14. The salts formed when zinc sulphate reacts with sodium hydroxide

a) **Zinc carbonate and zinc hydroxide**

b) **Zinc oxide and zinc hydroxide**

c) **Zinc oxide and sodium zincate**

d) **Zinc hydroxide and sodium sulphate**

15. Name the cation of the salt which forms a blue precipitate on adding sodium hydroxide in excess but dissolves to form an inky blue solution in excess of ammonium hydroxide solution

a) Zn^{2+}

b) Cu^{2+}

c) Fe^{2+}

d) Cu^{1+}

16. Which of the following salts do not form a precipitate on addition of ammonium hydroxide in excess?

a) $FeSO_4$

b) $Pb(NO_3)_2$

c) $Ca(NO_3)_2$

d) $FeCl_3$

17. What is the colour of cupric ion?

a) Pink

b) Blue

c) Reddish brown

d) Dirty green

18. What is the condition of the alkali in the given equation?

$$Zn + 2NaOH \rightarrow Na_2ZnO_2 + H_2\uparrow$$

a) Boiling

b) Hot and dilute

c) Cold and dilute

d) Hot and concentrated

19. Hydroxide of this metal is soluble in sodium hydroxide solution

a) Magnesium

b) Lead

c) Silver

d) Copper

20. Cupric hydroxide is a

a) Blue solution

b) Bluish white ppt.

c) White ppt.

d) Pale blue ppt.

21. Which of these salts can be used to differentiate between NaOH and NH_4OH?

a) $FeCl_3$

b) $Pb(NO_3)_2$

c) $Ca(NO_3)_2$

d) $ZnSO_4$

22. Which of these salts can be used to differentiate between NaOH and NH_4OH?

a) $FeSO_4$

b) $CuSO_4$

c) $ZnSO_4$

d) $FeCl_3$

23. What is the colour of the salt which reacts with sodium hydroxide to form a reddish brown precipitate?

a) Pale blue

b) White (amorphous)

c) Yellow

d) Dirty Green

24. What is the hydroxide formed when a chalky white precipitate reacts with ammonium hydroxide?

a) $[Cu(NH_3)_4](OH)_2$

b) $[Zn(NH_3)_4](OH)_2$

c) No reaction takes place

d) $Zn(OH)_2$

25. Which ion of a salt gives a reddish brown ppt. when it reacts with an alkali?

a) Zn^{2+}

b) Fe^{3+}

c) Fe^{2+}

d) Mg^{2+}

26. What is the colour of permanganate ion?

a) Blue

b) Red

c) Pink

d) Orange

27. When NaOH solution is added dropwise to Ferrous Sulphate, a _____ coloured precipitate is formed.

a) Reddish brown

b) Pale blue

c) Pale green

d) Chalky white

28. When excess of NH_4OHsolution is added to copper(II) hydroxide a complex salt is formed -

a) Tetraamine zinc chloride

b) No salt is formed, the precipitate remains insoluble

c) Sodium argentocyanide

d) Tetraamine copper hydroxide

29. When NaOH solution is added to zinc nitrate solution -

a) Chalky white ppt is formed

b) Gelatinous white ppt is formed

c) Dirty green ppt is formed

d) Reddish brown ppt is formed

30. The metal ion which can produce a coloured ion -

a) Ferric

b) Lead

c) Zinc

d) Calcium

31. The salts of which type of elements are generally coloured :

a) Halogens

b) Alkali metals

c) Transition elements

d) Representative elements

32. Which of these don't react with conc NaOH

a) KOH

b) Zn

c) Al2O3

d) HCl

33. The ppt formed when calcium nitrate reacts with sodium hydroxide solution :

a) calcium hydroxide

b) calcium sulphate

c) calcium chloride

d) calcium oxide

34. The hydroxides which are soluble in NaOH solution :

a) ferrous and copper

b) ferric and zinc

c) zinc and lead

d) copper and lead

35. The salt solution which cannot produce any ppt when treated with ammonium hydroxide solution:

a) Copper nitrate

b) Zinc nitrate

c) Lead nitrate

d) calcium nitrate

36. The compound formed when zinc hydroxide reacts with excess ammonium hydroxide :

a) Ammonium carbonate

b) Zinc oxide

c) Tetraammine zinc (ii) hydroxide

d) Sodium zincate

37. What happens when FeSO4 and Fe2(SO4)3 react with NaOH -

a) FeSO4 forms an insoluble green ppt whereas Fe2(SO4)3 dissolves in the solution.

b) Both dissolve in the solution, making the solution colourless.

c) Both dissolve in the solution, making the solution green and red respectively.

d) Both form ppts, FeSO4 forming a dirty green one and Fe2(SO4)3 forming a reddish brown one.

38. Insoluble sulphate which is soluble in excess of NaOH solution :

a) Calcium Sulphate

b) Lead(II) Sulphate

c) Barium Sulphate

d) Zinc Sulphate

39. Which salt forms an inky blue solution on reacting with excess of ammonium hydroxide

a) Magnesium Sulphate

b) Copper Nitrate

c) Lead Nitrate

d) Iron(III) Chloride

40. The salt which in solution gives a pale green precipitate with NaOH solution and a white ppt with $BaCl_2$ solution is :

a) Iron(III) Sulphate

b) Iron (II) Sulphate

c) Iron(III) Chloride

d) Iron(II) Chloride

41. Ammonia hydroxide solution is added dropwise to solution of metallic salts what is formed

a) Another salt

b) Nitrate

c) Precipitate of thier hydroxide

d) Metals

42. What exhibits dual characteristics of acidic and basic

a) All Metallic oxides and hydroxide

b) All Alkali

c) All Metals and non metals

d) All Amphoteric metals

43. Which of these react with NH4OH and form a soluble salt -

a) FeSO4

b) FeCl3

c) Pb(NO3)2

d) ZnSO4

44. What is formed when zinc oxide reacts with Sodium Hydroxide

a) sodium zincate

b) zinc hydroxide

c) zinc [II] hydroxide

d) potassium zincate

45. When Ammonium hydroxide is added to copper sulphate solution

a) Pale Blue Ppt is formed which is insoluble in excess ammonium hydroxide solution.

b) Pale blue Ppt formed which turns into Inky blue solution.

c) Reddish brown Ppt is formed which turns into blue solution.

d) Dirty green Ppt is formed which turns into blue solution.

46. The salt solution which cannot produce any Ppt when treated with ammonium hydroxide solution.

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

47. The colour of copper salt's precipitate in excess of alkali is

A- milky white ppt

B- reddish brown ppt

C- pale blue ppt

D- dirty green ppt

48. Salt formed when aluminium reacts with NaOH and water

A- 2NaAlO2

B- NaAlO2

C-Al2NaO

D- 2NaOH

49. Name a salt which will not react with NH_4OH solution

a) $ZnCl_2$
b) $CuCl_2$
c) NH_4Cl
d) $FeCl_2$

50. Name a substance which reacts with hot conc. NaOH solution and undergoes neutralization reaction

a) Al_2O_3
b) Al
c) $Al(OH)_3$
d) AlO