SALT ANALYSIS DPP

LEVEL-1

1. $FeSO_4$ gives brown ring with
(a) NO (b) N_2O_3 (c) NO_2 (d) N_2O_5

2. Phosphine gives black precipitate with
(a) NaCl (b) $AgNO_3$ (c) $AlCl_3$ (d) $CuSO_4$

3. When CaC_2O_4 is heated:
(a) only CO_2 is obtained (b) only CO is obtained
(c) both CO and CO_2 are obtained (d) CO and O_2 are obtained

4. A reddish brown gas, obtained on heating an inorganic compound with $K_2Cr_2O_7$ and conc. H_2SO_4 was bubbled through dil. NaOH. The alkaline solution yielded a yellow precipitate on addition of lead acetate. The inorganic compound is likely to be
(a) a chloride (b) a nitrate (c)a bromide (d) a sulphide

5. On boiling bicarbonates give:
(a) oxide and CO_2 (b) carbonates and CO_2
(c) don't decompose (d) oxide and O_2

6. The silver sulphate solution is used to separate
(a) Nitrate and bromide (b) Nitrate and chlorate
(c) Bromide and iodide (d) Chloride and bromide

7. Which of the following halides is almost insoluble in concentrated ammonia?
(a) AgI (b) AgF
(c) AgBr (d) AgCl

8. The brown ring test for NO_3^- is due to the formation of the complex ion with formula
(a) $[Fe(H_2O)_6]^{2+}$ (b) $Fe(NO(CN)_5]^{2-}$
(c) $[Fe(H_2O)_5NO]^{2+}$ (d) $[Fe(H_2O)\ (NO)_5]^{2+}$

9. When $K_2Cr_2O_7$ crystals are heated with concentrated HCl, the gas evolved is
(a) O_2 (b) Cl_2
(c) CrO_2Cl_2 (d) HCl

10. A substance on treatment with dilute H_2SO_4 liberates a colourless gas which produces (i) turbidity will baryta water and (ii) turns acidified dichromate solution green. The reaction indicates the presence of
(a) $C_2O_3^{2-}$ (b) S^{2-} (c) SO_3^{2-} (d)NO_2^-

11. A salt which gives CO_2 with hot H_2SO_4 and also decolourized acidified $KMnO_4$ on warming contains
(a)HCO_3^- (b) CO_3^{2-} (c) Oxalate ion (d)Acetate ion

12. When concentrated H_2SO_4 is added to dry KNO_3, brown fumes evolve. These brown fumes are of
(a) SO_2 (b) SO_3 (c) NO (d) NO_2

13. Na_2SO_3 and Na_2S can be distinguished from each other by using
(a) concentrated H_2SO_4. (b) an acidified $KMnO_4$ solution.
(c) an acidified $K_2Cr_2O_7$ solution. (d) a sodium nitroprusside solution.

14. A solution of white crystals gives a precipitate with $AgNO_3$ but no precipitate with a solution of Na_2CO_3. The action of conc. H_2SO_4 on the crystals yields a brown gas. The crystals are of
(a) $NaNO_3$ (b) KCl (c) $Ca(NO_3)_2$ (d) NaBr

15. The solution of a chemical compound X reacts with $AgNO_3$ solution to form a white precipitate of Y which dissolves in NH_4OH to give a complex Z. When Z is treated with dilute HNO_3, Y reappears. The chemical compound X can be
(a) NaCl (b) CH_3Cl (c) NaBr (d) NaI

16. A salt gives violet vapours when treated with conc. H_2SO_4, it contains
(a) Cl^- (b) I^- (c) Br^- (d) NO_3^-

17. NaCl, NaBr, Na I mixture on adding H_2SO_4 gives:
(a) HCl, Br_2, I_2 (b) HCl, HBr, HI (c) Cl_2, Br_2, I_2 (d) none

18. The aqueous solution of salt gives white ppt. with lead acetate solution which is insoluble in HNO_3.
The salt contains :
(a) Cl^- (b) Ba^{2+} (c) CO_3^{2-} (d) SO_4^{2-}

19. After obtaining the brown ring if the test tube is warmed & shaken then the gas obtained is :
(a) NO (b) NO_2 (c) N_2O (d) SO_2

20. NO_2^- gives brown ring test in presence of :
(a) dil CH_3COOH (b) Conc. H_2SO_4 (c) aqua regia (d) Conc. $HClO_4$

21. When $AgNO_3$ is strongly heated, the products formed are
(a) NO and NO_2 (b) NO_2 and O_2 (c) NO_2 and N_2O (d) NO and O_2

22. When a chloride salt is treated with MnO_2 and Conc. H_2SO_4 the gas obtained is :
(a)HCl , (b) Cl_2 (c) Cl_2O (d) SO_2

23. A white sodium salt dissolves readily in water to give a solution which is neutral to litmus. When silver nitrate solution is added to the solution, a white precipitate is obtained which does not dissolve in dil. HNO_3. The anion could be:
(a) CO_3^{2-} (b) Cl^- (c) SO_4^{2-} (d) S^{2-}

24. When I_2 is passed through KCl, KF, KBr :
(A) Cl_2 and Br_2 are evolved (B) Cl_2 is evolved
(C) Cl_2, F_2 and Br_2 are evolved (D) None of these

25. The species present in solution when CO_2 is dissolved in water are
(a) $CO_2, H_2CO_3, HCO_3^-, CO_3^{2-}$ (b) H_2CO_3, CO_3^{2-}
(c) CO_3^{2-}, HCO_3^- (d) CO_2, H_2CO_3

26. Soda extract is useful when given mixture has any insoluble salt, it is prepared by:
(a) fusing soda and mixture and then extracting with water
(b) dissolving $NaHCO_3$ and mixture in dil. HCl
(c) boiling Na_2CO_3 and mixture in dil. HCl
(d) boiling Na_2CO_3 and mixture in distilled water.

27. $CrCl_3 \xrightarrow[NH_4OH]{NH_4Cl} (A) \xrightarrow[H_2O]{Na_2O_2} (B) \xrightarrow[acetate]{Lead} (C)$

In this reaction sequence, the compound (C) is:

(a) Na_2CrO_4 (b) $Na_2Cr_2O_7$ (c) $Cr(OH)_3$ (d) $PbCrO_4$

28. Salt (A) gives brick red fumes (B) with conc. H_2SO_4 and $K_2Cr_2O_7$ which gives yellow solution (C) with $NaOH$ and it gives yellow ppt. (D) with acetic acid and lead acetate. What is (C)?

(a) Na_2CrO_4 (b) CrO_2Cl_2 (c) $PbCrO_4$ (d) $NaCl$

29. $FeSO_4$ is used in the brown ring test for a nitrate. What is the oxidation state of Fe in the compound responsible for the brown colour of the ring?

(a) 0 (b) 1 (c) $+2$ (d) $+3$

30. On heating a mixture of $NaBr$ and conc. H_2SO_4 we obtain:

(a) $HOBr$ (b) HBr (c) Br_2 (d) $HBrO_3$

31. The colour of the iodine solution is discharged by shaking with:
(a) sodiumsulphate (b) sodium sulphide
(c) aqueoussulphur dioxide (d) sodium bromide

32. In an alkaline solution, sodium nitroprusside gives a violet colour with:

(a) S^{2-} (b) SO_3^{2-} (c) SO_4^{2-} (d) NO_2^-

33. On heating, a salt gives a gas which turns lime water milky and an acidified dichromate solution green. The salt may be a:

(a) carbonate (b) sulphide (c) sulphate (d) sulphite

34. (A) shiny white crystal on treatment with $AgNO_3$ gives white crystalline precipitate. Also (A) discharge the colour of $KMnO_4$ solution but no gas is evolved. Probable radical present in (A) is:

(a) Cl^- (b) Br^- (c) NO_2^- (d) CO_3^{2-}

SALT ANALYSIS DPP

LEVEL-2

1. Which one of the following pairs of ions cannot be separated by H_2S in dilute HCl?
(a) Bi^{3+}, Sn^{4+} (b) Al^{3+}, Hg^{2+} (c) Cu^{2+}, Zn^{2+} (d) Ni^{2+}, Cu^{2+}

2. Which compound does not dissolve in hot dilute HNO_3?
(a) HgS (b) PbS (c) CuS (d) CdS

3. The metal ion, which is precipitated when H_2S is pass in dilute HCl is
(a)Zn^{2+} (b) Ni^{2+} (c) Pb^{2+} (d) Mn^{2+}

4. Identify the correct order of solubility of Na_2S, CuS and ZnS in aqueous medium.
(a) CuS>ZnS> Na_2S (b) ZnS> Na_2S >CuS
(c) Na_2S >CuS>ZnS (d) Na_2S >ZnS>CuS

5. When H_2S is passed through Hg_2^{2+}, we get
(a) HgS (b) HgS + Hg_2S (c) HgS + Hg (d) Hg_2S

6. Which gives violet colour with borax
(a) Fe (b) Pb (c) Co (d) Mn

7. A dark blue colour is obtained on adding excess of dilute NH_4OH solution in aqueous solution of copper sulphate. The deep blue colour is due to the presence of
(a) $CuSO_4$ (b) $Cu(OH)_2$ (c) $[Cu(NH_3)_4]^{2+}$ (d) $(NH_4)_2SO_4$

8. $PbCl_2 + KI \longrightarrow$ [A] + KCl
yellow ppt.

[A] + KI $\longrightarrow$ [B]
yellow ppt. (excess) (soluble)

Compound (A) and (B) are
(a) PbI_4 and $K_2[PbI_4]$ respectively (b) $K_2[PbI_4]$ and PbI_4 respectively
(c) PbI_2 and $K_2[PbI_4]$ respectively (d) PbI_2 and $K_2[PbI_2]$ respectively

9. Which of the following statement is correct?
(a) Fe^{2+} gives brown colour with ammonium thiocyanate.
(b) Fe^{2+} gives blue precipitate with potassium ferricyanide.
(c) Fe^{3+} gives brown colour with potassium ferrocyanide.
(d) Fe^{3+} gives red colour with potassium ferrocyanide.

10. Which of the following reagents may be used to identify Sr^{2+} ions in the presence of Ca^{2+} ions in a solution?
(a) NH_4Cl (b) $(NH_4)_2S_2O_8$ (c) $(NH_4)_2SO_4$ (d) $(NH_4)_2CO_3$

11. Which of the following compound on reaction with NaOH and Na_2O_2 gives yellow colour?
(a) Cr(OH) (b) $Zn(OH)_2$ (c) $Al(OH)_3$ (d) None of these

12. Which of the following will not give positive chromyl chloride test?
(a) Copper chloride, $CuCl_2$ (b) Mercuric chloride, $HgCl_2$
(c) Zinc chloride, $ZnCl_2$ (d) Anilinium chloride $C_6H_5NH_3Cl$

13. Prussian blue is formed when
(a) Ferrous sulphate reacts with $FeCl_3$.
(b) Ferric sulphate reacts with $K_4[Fe(CN)_6]$.
(c) Ferrous ammonium sulphate reacts with $FeCl_3$.
(d) Ammonium sulphate reacts with $FeCl_3$.

14. When bismuth chloride is poured into a large volume of water the white precipitate produced is
(a) $Bi(OH)_3$ (b) Bi_2O_3 (c) BiOCl (d) Bi_2OCl_3

15. The reagents NH_4Cl and aqueous NH_3 will precipitate :
(a) Ca^{2+} (b) Al^{+3} (c) Mg^{2+} (d) Zn^{2+}

16. The ion that cannot be precipitated by H_2S and HCl is
(a) Pb^{2+} (b) Hg_2^{2+} (c) Ag^{+} (d) Ni^{2+}

17. $CuSO_4$ decolourises on addition of excess KCN, the product is
(a) $[Cu(CN)_4]^{2-}$. (b) Cu^{2+} get reduced to form $[Cu(CN)_4]^{3-}$
(c) $Cu(CN)_2$ (d) CuCN

18. Which is soluble in NH_4OH?
(a) $PbCl_2$ (b) AgCl (c) $PbSO_4$ (d) $CaCO_3$

19. A white ppt obtained in a analysis of a mixture becomes black on treatment with NH_4OH. It may be
(a) $PbCl_2$ (b) AgCl (c) $HgCl_2$ (d) Hg_2Cl_2

20. A mixture of two salts is not water soluble but dissolves completely in dil HCl to form a colourless solution. The mixture could be:
(a) $AgNO_3$ and KBr (b) $BaCO_3$ and ZnS
(c) $FeCl_3$ and $CaCO_3$ (d) $Mn(NO_3)_2$ and $MgSO_4$

21. Black ppt.(A) dissolve in HNO_3 gives (B) which gives white ppt(C) with $NH_4OH(C)$ on reaction with HCl gives solution (D) gives white turbidity on addition of water. What is (D)?
(a) $Ca(OH)_2$ (b) $Bi(OH)_3$ (c) $BiOCl$ (d) $Bi(NO_3)_3$

22. There is mixture of $Cu(II)$ chloride and $Fe(II)$ sulphate. The best way to separate the metal ions from this mixture in qualitative analysis is:

(a) hydrogensulphide in acidic medium, where only $Cu(II)$ sulphide will be precipitate.

(b) ammonium hydroxide buffer, where only $Fe(II)$ hydroxide will precipitated

(c) hydrogensulphide in acidic medium, where only $Fe(II)$ sulphide will be precipitated

(d) ammonium hydroxide buffer, where only $Cu(II)$ hydroxide will be precipitated

23. $AgNO_3 \xrightarrow{\Delta} (W) + (X) + O_2$

$(X) + H_2O \longrightarrow HNO_2 + HNO_3$

$(W) + HNO_3 \longrightarrow Y + NO + H_2O$

$(Y) + Na_2S_2O_3\,(excess) \longrightarrow (Z) + NaNO_3$

Identify (W) to (Z) :

(a) $W = Ag,\ X = N_2O,\ Y = AgNO_3,\ Z = Na_2\left[Ag(S_2O_3)_2\right]$

(b) $W = Ag_2O,\ X = NO,\ Y = AgNO_3,\ Z = Na_3\left[Ag(S_2O_3)_2\right]$

(c) $W = Ag,\ X = NO_2,\ Y = AgNO_3,\ Z = Na_3\left[Ag(S_2O_3)_2\right]$

(d) $W = Ag_2O,\ X = N_2,\ Y = AgNO_3,\ Z = Na\left[Ag(S_2O_3)_2\right]$

24. A white, sublimable inorganic substance gives a brown precipitate on treatement with Nessler's reagent and a white precipitate (soluble in NH_3) with an $AgNO_3$ solution. The substance is:

(a) Hg_2Cl (b) $HgCl_2$ (c) As_2O_3 (d) NH_4Cl

25. Which of the following pairs of cations cannot be separated by using NH_3 solution?

(a) Pb^{2+}, Zn^{2+} (b) Pb^{2+}, Cu^{2+} (c) Zn^{2+}, Cu^{2+} (d) Al^{3+}, Ag^{+}

26. Which of the following pairs of cations cannot be separated by adding NH_4Cl and NH_4OH to the mixture and then passing H_2S through it?

(a) Co^{2+}, Ca^{2+} (b) Ni^{2+}, Sr^{2+} (c) Co^{2+}, Ni^{2+} (d) Zn^{2+}, Ba^{2+}

27. Which of the following leaves a black residue on the addition of NH_3 ?

(a) $AgCl$ (b) $PbCl_2$ (c) Hg_2Cl_2 (d) $HgCl_2$

28. Which of the following cations will form an insoluble red-brown compound with $\left[Fe(CN)_6\right]^{4-}$?

(a) Hg^{2+} (b) Pb^{2+} (c) Cu^{2+} (d) Cd^{2+}

29. An orange red precipitate obtained by passing H_2S through an acidified solution of an inorganic salt indicates the presence of

(a) Cadmiu (b) Tin (c) Antimony (d) Bismuth

30. A white crystalline substance dissolves in hot water. On passing H_2S in this solution, a black precipitate is obtained. The black precipitate dissolves completely in hot HNO_3. On adding a few drops of conc. H_2SO_4 a white precipitate is obtained. This substance is
(a) $BaSO_4$ (b) $SrSO_4$ (c) $PbCl_2$ (d) $CdSO_4$

31. The presence of NH_4^+ radical in solution can be detected by
(a) Fehling's solution (b) Benedict's solution
(c) Schiff's reagent (d) Nessler's reagent

LEVEL-3

Single Option Correct Question:

1. Which salt has its aqueous solution, coloured?
(a)$Zn(NO_3)_2$ (b) $LiNO_3$ (c) $Co(NO_3)_2$ (d)Potash Alum

2. An aqueous solution of $FeSO_4.Al_2(SO_4)_3$ and chrome alum is heated with excess of Na_2O_2 and filtered. The materials obtained are
(a) A colourless filtrate and a green residue.
(b) A yellow filtrate and a green residue.
(c) A yellow filtrate and a brown residue.
(d) A green filtrate and a brown residue.

3. Yellow ammonium sulphide solution is a suitable reagent used for the separation of
(a) HgS and PbS (b) PbS and Bi_2S_3
(c) Bi_2S_3 and CuS (d) CdS and As_2S_3

4. When Cl_2 water is added to an aq. Solution of potassium halide in the presence of chloroform, a violet colour is formed. On adding more of Cl_2 water, the violet colour disappears and a colourless solution is obtained. The test confirms the presence of _____ in solution
(a) Iodide (b) Bromide
(c)Chloride (d) Iodide and Bromide

5. $Fe(OH)_3$ can be separated from $Al(OH)_3$ by addition of
(a) dil. HCl (b) NaCl solution
(c) NaOH solution (d) NH_4Cl and NH_4OH

6. Conc. NaOH can separate a mixture of
(a) Al^{3+} and Cr^{3+} (b)Cr^{3+} and Fe^{3+}
(c) $Al^{3+}$and Zn^{3+} (d)Zn^{2+} and Pb^{2+}

7. A white powder solid A forms a light green solution with water, which on treatment with potassium hexacyanoferrate (III) gives a blue precipitate. On being strongly heated , A leaves a brown residue and forms a mixture of two gaseous oxides, which turns a dichromate solution green and forms a white precipitate with a $BaCl_2$ solution containing concentrated HCl . A is:
(a) $CuSO_4$ (b) $Fe_2(SO_4)_3$ (c) $FeSO_4$ (d) $Cr_2(SO_4)_3$

8. Which of the following mixtures can be separated by using aq. NH_3 solution?

(a) Fe^{3+} and Al^{3+} (b) Al^{3+} and Zn^{2+}

(c) Sn^{2+} and Pb^{2+} (d) Cu^{2+} and Cd^{2+}

9. A salt, when warmed with zinc powder and an $NaOH$ solution, gives a gas that turns a filter paper soaked with an alkaline solution of $K_2[HgI_4]$ brown. The salt respond to the brown ring test when acetic acid is used in place of sulphuric acid. The anion present in the salt is:

(a) NO_3^- (b) NO_2^- (c) Br^- (d) None of these

10. What will be the colour of the solution when $Mn(OH)_2$ is treated with concentrate HNO_3 and sodium bismuthate (or red lead or lead dioxide)?

(a) Yellow (b) Purple (c) Green (d) Blue

11. Fe^{2+} and Fe^{3+} can be distinguished by:

(a) $K_3[Fe(CN)_6]$ (b) $K_4[Fe(CN)_6]$ (c) $KSCN$ (d) All are correct

12. On strongly heating, blue salt leaves a black residue. Which of the following cations can be present in the salt?

(a) Fe^{2+} (b) Fe^{3+} (c) Cu^{2+} (d) Zn^{3+}

13. $BiCl_3$ can be reduced to metallic bismuth by:

(a) H_2S (b) SO_2

(c) $FeSO_4$ (d) $Na_2[Sn(OH)_4]$

14. A white solid forms Rinmanns' green in the charcoal cavity test in an oxidising flame. On treatment with dilute H_2SO_4, this solid produces a gas that turns an acidified dichromate paper green and lead acetate paper black. The white solid is:

(a) PbS (b) $ZnSO_3$ (c) ZnS (d) Na_2S

15. Which of the following pairs of cations will turn borax beads blue in an oxidising flame?

(a) Fe^{2+} and Co^{2+} (b) Co^{2+} and Cu^{2+} (c) Cu^{2+} and Mn^{2+} (d) Cu^{2+} and Cr^{3+}

16. An inorganic red coloured compound (A) on heating gives a compound (B) and a gas (C). (A) on treatment with conc. HNO_3 gives compound (D), brown colour substance (E) and a neutral oxide (F). Compound (D) on warming gives off again gas (C). Then, (E) will be:

(a) Mn_3O_4 (b) PbO_2 (c) Pb_3O_4 (d) Fe_2O_3

17. When a KI solution is added to a metal nitrate, a black precipitate is produced which dissolves in an excess of KI to give an orange solution. The metal ion is:

(a) Hg^{2+} (b) Bi^{3+} (c) Cu^{2+} (d) Pb^{2+}

18. $2Cu^{2+} + 5I^- \longrightarrow 2CuI\downarrow + [X]$

$[X] + 2S_2O_3^{2-} \longrightarrow 3[Y] + S_4O_6^{2-}$; X and Y are

(a) I_3^- and I^- (b) I_2 and I_3^- (c) I_2 and I^- (d) I_3^- and I_2

19. A blue colour is not obtained when :
(a) NH_4OH is dissolved in copper sulphate
(b) $CuSO_4$ reacts with $K_4\left[Fe(CN)_6\right]$
(c) Ferric Chloride reacts with sodium Ferro cyanide
(d)Anhydrous copper sulphate is dissolved in water

20. Yellow ammonium sulphate solution is a suitable reagent for the separation of:
(a) HgS and PbS (b) PbS and Bi_2S_3 (c) Bi_2S_3 and CuS (d) CdS and As_2S_3

21. When excess of $SnCl_2$ is added to a solution of $HgCl_2$, a white precipitate turning grey is obtained. The grey colour is due to formation of :
(a) Hg_2Cl_2 (b) $SnCl_4$ (c) Sn (d) Hg

22. When iodide salt is treated with $CUSO_4$ then the brown precipitate obtained is:
(a) CuI_2 (black) (b) CuI_2 (brown) (c) Cu_2I_2 (brown) (d)CuI_2(blue)

23. Solution of compound A is treated with KI and a scarlet precipitate was obtained which dissolved in excess KI. Compound A is :
(a)$ZnSO_4$ (b) $Pb(NO_3)_2$ (c) $PbCl_2$ (d) $HgCl_2$

24. When excess water is added to solution of compound A, white precipitate is obtained. When solution of A is treated with Na_2SnO_2 then a black ppt. is obtained. Compound A may be.
(a)$AgNO_3$ (b) $BiCl_3$ (c) $SbCl_3$ (d) $AsCl_3$

PASSAGE – 1

A black mineral (A) on heating in the presence of air gives a gas (B). The mineral (A) on reaction with dilute H_2SO_4 gives a gas (C) and the solution of a compound (D). On passing (C) into an aqueous solution of (B), white turbidity is obtained. The aqueous solution of (D) on reaction with $K_3[Fe(CN)_6]$ gives a blue compound (E).

1. The mineral (A) is
(a) ZnS (b) FeS (c)FeS_2 (d) Fe_2O_3

2. The gas (B) obtained is
(a) SO_2 (b) SO_3 (c) H_2S (d) O_2

3. The gas (C) is
(a) CO_2 (b) SO_2 (c) H_2S (d) N_2O

4. The aqueous solution of (D) contains
(a) $FeSO_4$ (b) $FeSO_4.(NH_4)_2SO_4$ (c) $FeCl_2$ (d) $FeCl_3$

5. The blue compound (E) must be
(a) $K_4Fe^{II}[Fe^{III}(CN)_6]$ (b) $K_2Fe^{II}[Fe^{II}(CN)_6]$

(c) $K_3Fe^{III}[Fe^{II}(CN)_6]$ (d) $KFe^{II}[Fe^{III}(CN)_6]$

PASSAGE – 2

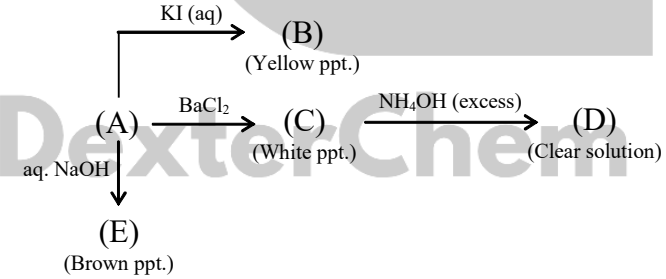
An aqueous solution of a white salt A gives a white precipitate B on treatment with dilute HCl in cold conditions. B is soluble in boiling water. An aqueous solution of A gives a yellow precipitate on treatment with a solution of K_2CrO_4. The soda extract of A is acidified with dilute H_2SO_4, boiled to remove CO_2 and treated with a freshly prepared solution of $FeSO_4$. Concentrated H_2SO_4 is added to the resulting solution (along the walls of the test tube so that the H_2SO_4 forms a separate layer). A brown ring is formed at the junction of the two layers.

1. On treatment with a KI solution, an aqueous solution of A will give
(a) a yellow precipitate soluble in boiling water.
(b) a yellow precipitate insoluble in boiling water.
(c) a white precipitate soluble in boiling water.
(d) a white precipitate insoluble in boiling water.

2. A solution of A, when treated with NH_3, gives
(a) a white precipitate soluble in an excess of NH_3.
(b) a white precipitate insoluble in an excess of NH_3.
(c) a grey precipitate soluble in an excess of NH_3.
(d) a grey precipitate insoluble in an excess of NH_3.

3. The salt A is
(a) $PbBr_2$ (b) $Pb(NO_3)_2$ (c) $AgNO_3$ (d) $Hg_2(NO_3)_2$

PASSAGE – 3



1. Compound (A) is
(a) $AgNO_3$ (b) $CuSO_4$ (c) $Pb(NO_3)_2$ (d) $Ca(NO_3)_2$

2. Yellow precipitate (B) is
(a) AgI (b) PbI_2 (c) CaI_2 (d) CH_3I

3. White precipitate (C) obtained on treatment with aqueous solution of $BaCl_2$, is
(a) $BaSO_4$ (b) $PbCl_2$ (c) AgCl (d) $CaCl_2$

4. The compound (D) obtained, when (C) dissolves in excess of NH_4OH will be

(a) AgOH (b) $[Ag(NH_3)_2Cl]$ (c) Ag_2O (d) $AgNO_3$

PASSAGE – 4

A bluish green coloured compound 'A' on heating gives two products 'B' and 'C'. A metal 'D' is deposited on passing H_2 through heated 'B'. The compound 'A' and 'B' are insoluble in water. 'B' is black in colour, dissolves in HCl and on treatment with $K_4[Fe(CN)_6]$ gives a chocolate brown ppt of compound 'E'. 'C' is colourless, odourless gas and turns lime water milky.

1. Compound 'A' is

(a) $CuSO_4$ (b) $CuCO_3$ (c) $FeSO_4$ (d) $CrCl_3$

2. The compounds 'B' and 'C' are respectively

(a) CuS, SO_2 (b) CuO, CO_2 (c) FeO, H_2S (d) Cr_2O_3, CO

3. The products 'D' and 'E' are respectively

(a) Cu, $Cu_2[Fe(CN)_6]$ (b) Fe, $Cu_2[Fe(CN)_6]$

(c) Cr, $CuCO_3$ (d) Zn, CuO

PASSAGE – 5

A black coloured compound (A) on reaction with dil. H_2SO_4 gives a gas (B) which on passing in a solution of an acid (C) gives a white turbidity (D). Gas (B) when passed in an acidified solution of a compound (E) gives a black ppt (F) which is soluble in dil. HNO_3. After boiling this solution when excess of NH_4OH is added, a blue coloured compound (G) is formed. To this solution on addition of acetic acid and aqueous potassium ferrocyanide, a chocolate brown ppt (H) is formed. On addition of an aqueous solution of $BaCl_2$ to an aqueous solution of (E) white ppt. insoluble in HNO_3 is obtained.

1. Black coloured compound (A) is

(a) PbS (b) CuS (c) FeS (d) all of these

2. The gas (B) on passing through an acid (C) gives a white turbidity (D) because

(a) Gas (B) acts as an oxidising agent (b) Gas (B) acts as an reducing agent

(c) Acid (C) acts as an oxidising agent (d) (B) and (C) both

3. The compound (E) responds to following properties

(a) It gives white ppt with $(CH_3COO)_2Pb$ solution soluble in ammonium acetate.

(b) It gives dirty white ppt with KI.

(c) Its hydrated salt effloresces.

(d) All of these.

Multiple Option Correct Question:

1. Which of the following changes color of acidified $K_2Cr_2O_7$?

(a) CO_2 (b) H_2S (c) SO_2 (d) None

2. Which of the following is/are soluble in excess NaOH ?

(a) Fe $(OH)_3$ (b) Al $(OH)_3$ (c) Zn $(OH)_2$ (d) Cr $(OH)_3$

SALT ANALYSIS DPP

3. When Na_2CrO_4 is treated with H_2O_2 in acidic medium :
(a) a green colored solution is obtained
(b) yellow colored solution is obtained
(c) blue colored solution is obtained
(d) orange colored solution is obtained

4. Which of the following is soluble in Conc. HCl ?
(a) CoS (b) NiS (c) MnS (d) ZnS

5. Which of the following dissolve in excess NH_4OH ?
(a)$Zn(OH)_2$ (b) $Cu(OH)_2$ (c) $Fe(OH)_3$ (d) $Mn(OH)_2$

6. Which of the following pairs of cations cannot be separated by using aq. NaOH solution?
(a) Fe^{3+} , Al^{3+} (b) Cr^{3+}, Al^{3+} (c) Sn^{2+}, Pb^{2+} (d) Cu^{2+}, Pb^{2+}

7. In which of the following cases will a violet colouration be observed ?
(a)An alkaline solution of sodium nitroprusside is treated with a solution of Na_2S
(b) A solution of sodium cobaltinitrite is treated with one of KCl
(c) A solution of $Mn(NO_3)_2$ is treated with sodium bismuthate or red lead in the presence of concentrated HNO_3
(d) A solution of sodium nitroprusside in aqueous NaOH is treated with Na_2SO_3

8. Which of the following sulphates are soluble in water ?
(a)$CuSO_4$ (b) $PbSO_4$ (c) Ag_2SO_4 (d) $BaSO_4$

9. Acidic $K_2Cr_2O_7$ reacts with H_2S to produce :
(a) Cr^{6+} ions (b) Cr^{3+} ions (c) SO_2 (d) S

10. Which of the following substances on being heated will give a gas that turns lime water milky?
(a) Na_2CO_3 (b) $ZnCO_3$ (c)$ZnSO_3$ (d) $MgCO_3$

11. A white precipitate is obtained when :
(a) a solution of $BaCl_2$ is treated with Na_2SO_3
(b) a solution of $NaAlO_2$ is heated with NH_4Cl
(c) H_2S is passed through a solution of $ZnSO_4$
(d) a solution of $ZnSO_4$ is treated with one of Na_2CO_3

12. On reaction with dilute H_2SO_4, which of the following salts will give out a gas that turns an
Acidified dichromate paper green ?
(a) Na_2CO_3 (b) Na_2S (c) $ZnSO_3$ (d) FeS

13. A yellow precipitate is obtained when:
(a) lead acetate solution is treated with K_2CrO_4
(b) $Pb(NO_3)_2$ solution is treated with K_2CrO_4
(c) $AgNO_3$ solution treated with KI

(d) H_2S is passed through a solution of $CdSO_4$

14. Which of the following ions can be separated by using NH_4Cl and NH_4OH ?
(a) Fe^{3+} and Cr^{3+} (b) Cr^{3+} and Co^{2+} (c) Cr^{3+} and Al^{3+} d) Al^{3+} and Ba^{2+}

15. Which of the following substances will leave a black residue on strong heating?
(a) $CuSO_4 \cdot 5H_2O$ (b) $ZnCO_3$ (c) $PbCO_3$ (d) $MnSO_4$

16. An aqueous solution containing S^{2-} ions will not give :
(a) Yellow precipitate with the suspension of $CdCO_3$ in water
(b) Black precipitate with lead acetate solution
(c) White precipitate with $BaCl_2$ solution
(d) Purple colour with sodium thiosulphate solution

SALT ANALYSIS DPP

Answers

LEVEL-1

1. a	**2. b**	**3. c**	**4. a**	**5. b**	**6.a**
7. a	**8. c**	**9. b**	**10. c**	**11. c**	**12. d**
13. d	**14. D**	**15. a**	**16. b**	**17. a**	**18. d**
19. a	**20. a**	**21. B**	**22. B**	**23. b**	**24. d**
25. a	**26. d**	**27. d**	**28. A**	**29. b**	**30. c**
31. c	**32. a**	**33. d**	**34. c**		

LEVEL-2

1. a	**2. a**	**3.c**	**4. d**	**5. c**	**6. d**
7. c	**8. c**	**9. b**	**10. c**	**11. a**	**12. b**
13. b	**14. c**	**15. B**	**16. d**	**17. b**	**18. b**
19. d	**20. B**	**21. C**	**22. a**	**23. c**	**24. D**
25. c	**26. C**	**27. C**	**28. C**	**29. c**	**30. C**
31.d					

LEVEL-3

Single Option Correct

1. c	2. C	3. d	4. a	5. c	6. b
7. c	8. b	9. b	10. b	11. d	12. c
13. d	14. C	15. b	16. b	17. b	18. a
19. b	20. d	21. D	22. c	23. d	24. b

Comprehension Type

Passage 1	1. b	2. a	3. c	4. a	5. d
Passage 2	1. a	2. b	3. b		
Passage 3	1. a	2. a	3. c	4. b	
Passage 4	1. b	2. b	3. a		
Passage 5	1. d	2. d	3. D		

One Or more than one option correct

1. b,c	2. b, c,d	3.d	4. c,d	5. a,b,c,d	6. b,c
7. a,c	8. a,c	9. b,d	10. b,c,d	11. a,b,c,d	12. b,c,d
13. a,b,c,d	14. b,d	15. a,d	16. c,d		