



CHEMISTRY

BOOKS - S DINESH & CO CHEMISTRY (HINGLISH)

APPENDICES

Multiple Choice

1. The reaction of NaCl and $K_2 Cr_2 O_7$ mixture with conc. $H_2 SO_4$ result in

the formation of:

A. CrO_2Cl_2

 $\mathsf{B.} \mathit{CrOCl}_2$

 $\mathsf{C.}\, CrO_2Cl$

 $\mathsf{D.}\left(CrOCl_2\right)_2$

Answer: A

2. When Cl_2 water is added to an aqueous solution of potassium halide in presence of chloroform, a violet colour is obtained upon shaking. This confirms the presence of

A. iodide

B. bromide

C. chloride

D. iodide and bromide

Answer: A

View Text Solution

3. A white crystalline substance dissolves in hot water. On passing H_2S in this solution, 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. $SrSO_4$

 $\mathsf{C}. PbCl_2$

D. $CdSO_4$

Answer: C

View Text Solution

4. Chloride of which element will be coloured ?

A. Ag

B. Hg

C. Zn

D. Co

Answer: D



5. On the addition of a solution containing CrO_4^{2-} ions to the solution

of Ba^{2+}, Sr^{2+} and Ca^{2+} ions, the precipitate obtained first will be of:

- A. $CaCrO_4$
- B. $SrCrO_4$
- $C. BaCrO_4$
- D. a mixture of all the three

Answer: C

View Text Solution

6. Which gives blue bead in borax bead test?

A. $Cr^{3\,+}$

B. Co^{2+}

C. Ni^{2+}

D. Cd^{2+}

Answer: B

View Text Solution

7. Borax when heated on platinum wire forms a glass like bead which is made up of :

A. Sodium tetraborated

B. sodium metaborate

C. sodium metaborate and boric anhydride

D. boric anhydride and sodium tetraborate

Answer: C

8. A light green coloured salt soluble in water gives black percipitate on passing H_2S which dissolves readily in HCl. The metal ion present is :

A. Co^{2+}

B. Zn^{2+}

C. Ni^{2+}

D. Mn^{2+}

Answer: C

View Text Solution

9. Soda extract or sodium carbonate extract is prepared for

A. testing all cations

B. testing all anions

C. testing anion which are water insoluble

D. all are correct

Answer: C

O View Text Solution

10. For the test of halides, the soda extract is acidified with :

A. dil. H_2SO_4

B. dil. HNO_3

C. dil. HCl

D. any of the three

Answer: B

View Text Solution

11. A mixture when rubbed with oxalic acid smells like vinegar. It contains salt of :

A. sulphate

B. nitrate

C. nitrite

D. acetate

Answer: D

View Text Solution

12. All ammonium salts liberate ammonia when :

A. heated alone

B. heated with caustic soda

C. heated with H_2SO_4

D. heated with $NaNO_2$

Answer: B

View Text Solution

13. Silver, mercury (our) and lead are grouped toether in the same group

of qualitative analysis because they form:

A. nitrates

B. carbonates which dissolve in dill. HNO_3

C. insoluble chlorides

D. colourless compounds

Answer: C

View Text Solution

14. Which sulphides are soluble only in aqura regina?

A. NiS

B. CoS

C. HgS

D. all of these

Answer: D

View Text Solution

15. In the second group of qualitative analysis, H_2S is pass through a solution acidified with HCl in order to :

A. limit the concentration of S^{2-} ions

B. increase the solubility of H_2S

C. increase the concentration of S^{2-} ions

D. provide extra Cl^- ions

Answer: A

16. Two colourless gases on mixing formed dense white fumes. These are :

- A. NH_3 and SO_2
- B. SO_2 and steam
- $C. NH_3$ and HCl
- $D. NH_3$ and HNO_2

Answer: C

View Text Solution

17. Few drops of salt solution are shaken with chloroform followed by chlorine water. Chloroform layer becomes orange. Solution contains:

A.
$$NO_2^-$$
 ions

B. NO_3^- ions

C. Br^{-} ions

D. $I^{\,-}\,$ ions

Answer: C

View Text Solution

18. A compound is soluble in water. If ammonia is added to aqueous solution of compound, a reddish brown precipitate appears which is soluble in dill. HCl. The compound is a salt of :

A. aluminium

B. zinc

C. iron

D. cadmium

Answer: C

View Text Solution

19. Dolute nitric acid is generally not used for the preparation of original solution for the basic radicals because it :

A. it is a reducing agent

B. it is an oxidising agent

C. forms insoluble nitrates

D. forms soluble nitrates

Answer: B

View Text Solution

20. Formation of a green edged flame on igniting the vapours evolved by heating an inorganic salt with a few mL of ethyl alcohol and conc. H_2SO_4 indicates the presence of :

A. tartarate

B. oxalate

C. borate

D. acetate

Answer: C

View Text Solution

21. Reagent which can detect the presence of NH_3 is:

A. Fehling's solution

B. Nessler's reagent

C. Benedict's solution

D. Lucas reagent

Answer: B

View Text Solution

22. which cation cannot be identified by flame test ?

A. Na⁺ B. K⁺ C. Ba²⁺

D. $Mg^{2\,+}$

Answer: D

View Text Solution

23. An aqueous solution of a mixture contains Br^- and I^- ions. On

passing Cl_2 gas and adding $CHCl_3$, then organic layer will acquire :

A. violet colour

B. reddish brown colour

C. colourless

D. blue colour

Answer: A



Answer: A

View Text Solution

25. Which volatile compound burns with green edged flame ?

A. $(C_2H_5)_3B$

B. $(C_2H_5)_3BO_3$

 $\mathsf{C}. Ba(NO_3)_2$

D. $BaCl_2$

Answer: B

View Text Solution

26. which among the following pairs of ions cannot be separated by H_2S

in the presence of dilute HCl?

A.
$$Bi^{3+}, Sn^{4+}$$

B. Al^{3+}, Hg^{2+}
C. Zn^{2+}, Cu^{2+}
D. Ni^{2+}, Cu^{2+}

Answer: A

27. An queous solution of a substance gives a white precipitate on treating with dilute hydrochloric acid which dissolves on heating. When hydrogen sulphide is passed through the hot solution, a black precipitate is obtained. The substance is :

A. Hg^{2+} salt

B. $Cr^{3\,+}$ salt

C. Ag^+ salt

D. $Pb^{2\,+}$ salt

Answer: A

View Text Solution

28. The metal ions which are precipitated when H_2S gas is passed in the presence of dilute HCl is :

A. Zn^{2+}

B. Ni^{2+}

 $\mathsf{C}.\,Cd^{2\,+}$

D. Mn^{2+}

Answer: C

View Text Solution

29. Which of the following metal sulphides have maximum solubility in water ?

A. $HgSig(K_{sp}=10^{-54}ig)$

B. $CdS(K_{sp}=10^{-30})$

C. $FeS(K_{sp}=10^{-20})$

D.
$$ZnSig(K_{sp}=10^{-22}ig)$$

Answer: C

30. The compound formed in the Borax Bead Test of Cu^{2+} ions in the oxidising flame is:

A. Cu

 $\mathsf{B.}\,Cu(BO_2)_2$

 $C. CuBO_2$

D. None of these

Answer: B

View Text Solution

31. A gas 'X' is passed through water to form a solution. The aqeous solution on treatment with $AgNO_3$ solution gives a white precipitate. The sturated aqueous solution also dissolves magnesium ribbon with the evolution of colourless gas 'Y'. Identify 'X' and 'Y'

A.
$$X=CO_2,Y=Cl_2$$

B. $X=Cl_2,Y=CO_2$
C. $X=Cl_2,Y=H_2$
D. $X=H_2,Y=Cl_2$

Answer: C

View Text Solution

32. Identify the correct order of solubility of Na_2S, CuS and ZnS in aqueous solution :

- A. $CuS > ZnS > Na_2S$
- B. $ZnS > Na_2S > CuS$
- C. $Na_2S > CuS > ZnS$
- D. $Na_2S > ZnS > CuS$

Answer: D

33. When H_2S gas is passed through aqueous solution of $CuCl_2$, $HgCl_2$, $BiCl_3$ and $CoCl_2$ in the presence of excess of dilute HCl, it fails to precipitate

A. CuS

 $\mathsf{B}.\,HgS$

 $\mathsf{C}.\,Bi_2S_3$

 $\mathsf{D.}\,COS$

Answer: D

View Text Solution

34. IN the borax bead test which compound is formed ?

A. Orthoborate

B. Metaborate

C. Double oxide

D. Tetraborate

Answer: B

View Text Solution

35. Mark the correct statement :

A. Group I basic radicals are precipitated as chlorides

B. Group IV basic radicals are precipitated as sulphides

C. Group V basic radicals are precipitated as carbonates

D. All the statement are correct.

Answer: D

View Text Solution

36. When H_2S is passed through Hg_2^{2+} , we get :

A. HgS

B. $HgS + Hg_2S$

C. HgS + Hg

D. Hg_2S

Answer: C

View Text Solution

37. How do we differentiate between Fe^{3+} and Cr^{3+} ions in group III ?

A. By adding excess of NH_4OH solution

B. By increasing NH_4^+ ion concentration

C. By decreasing OH^- ion concentration

D. Both (b) and (c) are correct

Answer: B



38. A solution which is $10^{-3}M$ each in Mn^{2+} , Fe^{2+} , Zn^{2+} and Hg^{2+} is treated with $10^{-16}M$ sulphide ion. If K_{sp} of MnS, FeS, ZnS and HgS are 10^{-15} , 10^{-23} , 10^{-20} and 10^{-54} respectively, which one will precipitate first ?

A. FeS

B. MgS

C. HgS

D. ZnS

Answer: C

View Text Solution

39. A red solide is insoluble in water. However it becomes soluble if some KI is added to water. On heating the red solid in a test tube, there is liberation of some violet coloured fumes and droplets of a metal appear on the cooler parts of the test tube. The red solid is :

A. HgO

B. Pb_3O_4

 $\mathsf{C.} (NH_4)_2 Cr_2 O_7$

D. Hgl_2

Answer: D

View Text Solution

40. Ammonia forms the complex $[Cu(NH_3)_4]^{2+}$ with copper ion in alkaline solution but not in acidic solution. This is due to the reason that :

A. in alkaline solution insoluble $Cu(OH)_2$ is precipitated which is

soluble in excess of any alkali

B. $Cu(OH)_2$ is amphoteric

C. in acidic solution hydration protects Cu^{2+} ion

D. in acidic solution, proton coordinates with NH_3 forming NH_4^+ ion

and NH_3 is not available

Answer: D

View Text Solution

41. Which of the following statement is correct?

A. Fe^3 give a deep green ppt. on adding $K_4ig[Fe(CN)_6ig]$ solution

B. On boiling a solution having K^+, Ca^{2+} and HCO_3^- ions, we get a

precipitate of $K_2[Co(CO_3)_2]$

C. Manganese salts gives a violet borax bead test in reducing flame

D. From a mixed precipitate of AgCl and Agl, ammonia solution

dissolves only AgCl

Answer: D

View Text Solution

42. Which of the following sulphides is yellow in colour ?

A. CuS

B. CdS

C. ZnS

D. CoS

Answer: B

View Text Solution

43. A soldium salt of unknown anion when treated with $MgCl_2$ gives white precipitate only on boiling. The anion is:

A. SO_4^{2-} B. HCO_3^{-} C. CO_3^{2-}

 $\mathsf{D.}\,NO_3^{\,-}$

Answer: B

View Text Solution

44. Nassler's reagent is :

A. $NaHgCl_4$

 $\mathsf{B.}\,K_2HgI_4$

C. $Hg(NH_3)_2Cl$

D. $K_2HgI_4 + KOH$

Answer: B



45. A metal nitrate reacts with KI solution to give a block precipitate which on addition of excess of KI solution forms an orange coloured solution. The cation of metal nitrate is :

A. $Hg^{2\,+}$

B. Bi^{3+}

 $\mathsf{C.}\, Pb^{2\,+}$

D. Cu^{2+}

Answer: B

View Text Solution

46. Which of the following is not soluble in NaOH?

A. $Fe(OH)_3$

B. $Zn(OH)_2$

 $\mathsf{C.} Al(OH)_3$

 $\mathsf{D.}\,Sn(OH)_2$

Answer: A

View Text Solution

47. The brown ring test for the NO_3^- ions is due to the formation of :

A. $FeSO_4$. NO_2

- $\mathsf{B.}\left[Fe(SO_4)_2NO\right]H_2O$
- C. $\left[Fe(H_2O)_5NO
 ight]^{2+}$
- D. None of these

Answer: C

48. Heating an ammoniacal solution of $MgSO_4$ in the presence of NH_4Cl and Na_2HPO_4 causes the precipitation of:

A. $Mg(HPO_4)$

B. $Mg(NH_4)PO_4$

 $\mathsf{C.}\,MgCl_2$

D. $Mg(NH_4)_2(PO_4)_2$

Answer: B

View Text Solution

49. A solution of a metal ion when treated with KI solution gives a red precipitate which dissolves in excess of KI solution to give a colourless solution. Moreover, the solution of the same metal ion on treatment with the solution of cobalt (II) thiocyanate gives rise to a deep blue crystalline precipitate. The metal ion is

A. $Pb^{2\,+}$

B. Hg^{2+}

 $\mathsf{C.}\, Cu^{2\,+}$

D. Co^{2+}

Answer: B

View Text Solution

50. When KI is added to acidified solution of solution of sodium nitrite :

A. NO gas is liberated and I_2 is set free

B. N_2 gas is liberated and HI is produced

C. N_2O gas is liberated and I_2 is set free

D. N_2 gas is liberated and HOI is produced

Answer: A

51. $Fe(OH)_3$ can be separated from $Al(OH)_3$ by the addition of :

A. NaOH solution

B. dil. HCl solution

C. NaCl solution

D. NaOH & NH_4Cl solution

Answer: A

View Text Solution

52. S^{2-} and SO_3^{2-} ions can be distinguished by using

A. $(CH_3COO)_2Pb$

 $\mathsf{B.} Na_2 \big[Fe(CN)_5 NO \big]$

C. Both (a) & (b)

D. None of these

Answer: C

View Text Solution

53. In which of the following, ammonia is not present?

A. Nessler's reagent

B. Group reagent for the analysis of basic radicals of group IV

C. Group reagent for the analysis of basic radicals of group III

D. Tollen's reagent

Answer: A

View Text Solution

54. A solution of a colourles salt H on boiling with excess of NaOH produces a non-flammable gas and the evolution of gas ceases after sometime. Upon addition of Zn dust to the same solution, the evolution of gas restarts. The colourless salt (S) 'H' is (are)

A. NH_4NO_3

B. NH_4NO_2

 $\mathsf{C}. NH_4Cl$

D. $(NH_4)_2 SO_4$

Answer: A::B

View Text Solution

55. A white crystalline salt [A] reacts with dilute HCl to liberate a suffocatig gas [B] and also forms a yellow precipitate. The gas [B] turns potassium dichromatic acidified with dilute H_2SO_4 to a green coloured solution [C]. The compound A, B and C are respectively

A. $Na_2SO_3, SO_2, Cr_2(SO_4)_3$

- B. $Na_2S_2O_3, SO_2, Cr_2(SO_4)_3$
- C. $Na_2S, SO_2, Cr_2(SO_4)_3$
- D. $Na_2SO_4, SO_2, Cr_2(SO_4)_3$

Answer: B

View Text Solution

56. Passing H_2S gas into a mixture of Mn^{2+} , Ni^{2+} , Cu^{2+} and Hg^{2+} ions in an acidified aqueous solution, precipitates :

A. MnS and CuS

B. CuS and HgS

C. MnS and NiS

D. NiS and HgS

Answer: B

57. CB_2 layer gives a test for

A. Cl^- only

B. Br^{-} and I^{-}

C. Br^- only

D. I^- only

Answer: B

D View Text Solution

58. Upon treatment with ammoniacal H_2S solution, the metal ion precipitating as sulphide is:

A. Fe(III)

B. Al (III)

C. Mg (II)

D. Zn (II)

Answer: D

O View Text Solution

59. Match the list I with list II and select the correct answer using the code given below the lists.

	$\operatorname{List} I$		List II
P	Sr^{2+}	1	Golden yellow
Q	K^+	2	$\operatorname{Apple}\operatorname{green}$
R	Na^{+}	3	$\operatorname{Crimson} \operatorname{red}$
S	Ba^{2+}	4	Lilac

A.
$$\begin{array}{cccccc}
P & Q & R & S \\
1 & 2 & 3 & 4 \\
\end{array}$$
B. $\begin{array}{cccccc}
P & Q & R & S \\
3 & 4 & 1 & 2 \\
\end{array}$
C. $\begin{array}{cccccc}
P & Q & R & S \\
2 & 1 & 4 & 3 \\
\end{array}$
D. $\begin{array}{ccccccc}
P & Q & R & S \\
2 & 1 & 4 & 3 \\
\end{array}$

60. A yellow turbidity, sometimes appears on passing H_2S gas ever in the absence of the second group radicals. This happens because

A. sulphur is present in the mixture as an impurity

B. the fourth group radicals are precipitated as sulphides

C. H_2S is oxidised by some acidic radical present in solution

D. the third group radicals are precipitated

Aqueous sodium hydroxide reacts with a metal ion

Answer: C



61. X' is a colourless salt giving following reactions :



'X' can be

A. $AlCl_3$

B. $ZnCl_2$

C. $Zn(CH_3COO)_2$

D. $ZnBr_2$

Answer: B

View Text Solution

62. An aqueous solution of a mixture of two inorganic salts when treated with dilute HCl, gave a precipitate (P) and a filtrate (Q). The precipitate (P)

was found to dissolve in hot water. The filtrate (Q) remained unchanged, when treated with H_2S in a dilute mineral acid medium. However, it gave a green precipitate (R) in an ammoniacal medical. The precipitate (R) gave a coloured solution (S), when treated with H_2O_2 in an aqueous NaOH medium. Answer Question 62 and 63

The coloured solution (S) contains

A. $Fe(SO_4)_3$

B. $CuSO_4$

 $C. ZnSO_4$

D. Na_2CrO_4

Answer: D

View Text Solution

63. An aqueous solution of a mixture of two inorganic salts when treated with dilute HCl, gave a precipitate (P) and a filtrate (Q). The precipitate (P) was found to dissolve in hot water. The filtrate (Q) remained unchanged,

when treated with H_2S in a dilute mineral acid medium. However, it gave a green precipitate (R) in an ammoniacal medical. The precipitate (R) gave a coloured solution (S), when treated with H_2O_2 in an aqueous NaOH medium. Answer Question 62 and 63

The precipitate P contains

A. Pb^{2+} B. Hg_2^{2+} C. Ag^+ D. Hg^{2+}

Answer: A

View Text Solution

64. Among PbS, CuS, HgS, MnS, Ag_2S , NiS, CoS, Bi_2S_3 and SnS_2 , total number of black coloured sulphides is :

A. Four

B. Six

C. Five

D. Three

Answer: B

View Text Solution

65. The incorrect statement in respect of chromyl chloride test is

A. formation of red vapour

B. formation of lead chromate

C. formation of chromyl chloride

D. liberation of chlorine

Answer: D

View Text Solution

66. When I_2 is passed through KCl, KF and KBr solution

A. Cl_2 and Br_2 are evolved

B. Cl_2 is evolved

C. Cl_2, Br_2 and F_2 are evolved

D. None of the above

Answer: D

View Text Solution

67. Among the following observation, the correct one that differentiates

between SO_3^{2-} and SO_4^{2-} is

A. Both form precipitates with $BaCl_2,\,SO_3^{2\,-}$ dissolves in HCl but

 SO_4^{2-} does not

B. SO_3^{2-} forms precipitate with $BaCl_2, \, SO_4^{2-}$ does not

C. SO_4^{2-} forms precipitate with $BaCl_2, \, SO_4^{2-}$ does not

D. Both forms precipitates with $BaCl_2, SO_4^{2-}$ dissolves in HCl but

 SO_3^{2-} does not

Answer: A

View Text Solution

68. The pair (s) where both the ions are precipitated upon passing H_2S gas in the presence of dilute HCl is (are) :

A.
$$Ba^{2+}, Zn^{2+}$$

B. Ba^{2+}, Fe^{3+}
C. Cu^{2+}, Pb^{2+}
D. Hg^{2+}, Bi^{3+}

Answer: C::D

View Text Solution

69. In the presence of dilute HCl, H_2S results in the precipitation of group II cations but not group IV cations during qualitative analysis. It is due to :

A. higher concentration of H^+ ions

B. lower concentration of H^+ ions

C. higher concentration of S^{2-} ions

D. lower concentration of S^{2-} ions

Answer: D

View Text Solution

70. Consider the following salts :

 $NaCl, HgCl_2, CuCl_2, CuCl$ and AgCl

Identify the correct salts that are insoluble in water.

A. $Hg_2Cl_2, CuCl, AgCl$

 $\mathsf{B}.\,HgCl_2,\,CuCl,\,AgCl$

C. $Hg_2Cl_2, CuCl_2, AgCl$

 $D. Hg_2Cl_2, CuCl, NaCl$

Answer: A

View Text Solution

71. The hottest region of Bunsen flame shown in the figure below is :



A. region 2

B. region 3

C. region 4

D. region 1

Answer: A

View Text Solution

72. compound X is tested and the results are shown in the following

table.

TestResultAqueous NaOH is added and heated gently.Gas released turns moist redDilute HCl is addedGas is evolved accompaniedThe compound X containsA. Ammonium and suphite ions

B. Ammonium and carbonate ions

C. Sodium and carbonate ions

D. Ammonium and sulphate ions

Answer: A



73. The reagent (s) that can selectively precipitate S^{2-} from a mixture of S^{2-} and SO_4^{2-} in aqueous solution is (are)

A. $CuCl_2$

 $\mathsf{B.}\,BaCl_2$

 $C. Pb(OOCCH_3)_2$

 $\mathsf{D.} \, Na_2 \big[Fe(CN)_5 NO \big]$

Answer: A

View Text Solution

74. $HgCl_2$ and I_2 both when dissolved in water containing I^- ions, the pair of species formed is :

A. $Hgl_{2}I^{-}$ B. Hgl_{4}^{2-}, I_{3}^{-} C. $Hg_{2}l_{2}, I^{-}$

D. Hgl_2, I_3^-

Answer: B

View Text Solution

75. When $BaCl_2$ is added to an aqueous salt solution, a while precipitate is obtained. The anion among CO_3^{2-} , SO_3^{2-} and SO_4^{2-} that was present in the solubtion can be :

A. CO_3^{2-} but not any of the other two

B. SO_3^{2-} but not any of the other two

C. $SO_4^{2\,-}$ but not any of the other two

D. None of these

Answer: D

View Text Solution

76. The correct options (s) to distinguish nitrate salts of Mn^{2+} and Cu^{2+} taken separately is (are)

A. ${Mn^2}^+$ show the characteristic green colour in the flame test

B. only Cu^{2+} show the formation of precipitate by passing H_2S in

acidic medium

C. Only Mn^{2+} show the formation of precipitate by passing H_2S in

faintly basic medium

D. Cu^{2+}/Cu has higher reduction potential than Mn^{2+}/Mn (measured under similar conditions)

Answer: B::D

