NEET REVISION SERIES

SALT ANALYSIS

Revise Most Important Questions to Crack NEET 2020

Q-1 - 15199598

Which are amongst the following pairs of ions cannot be separated by H_2S is dilute HCl ?

(A) Bi^{3+}, Sn^{4+}

(B) Al^{3+}, Hg^{2+}

(C) Zn^{2+}, Cu^{2+}

(D) Ni^{2+}, Cu^{2+}

CORRECT ANSWER: A

Q-2 - 15199591

A sodium salt of an unknown anion when treated with $MgCl_2$ gives white precipitate only on boiling. The anion is

(A) SO_4^{2-}

(B) HCO_3^{2-}

(C) CO_3^{2-}

(D) NO_3^-

CORRECT ANSWER: B

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Q-3 - 15199597

The brown ring complex compound is formulated as $\left[Fe(H_2O)_5NO\right]SO_4$. The oxidation state of Fe is

(A) 1

(B) 2

(C) 3

(D) 0

CORRECT ANSWER: A

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Q-4 - 11481458

Cone H_2SO_4on adition to dry KNO_3 givesdrown fames of :

(A) SO_2

(B) SO_3

(C) SO

(D) NO_2

CORRECT ANSWER: D

SOLUTION:

$$KNO_3 + H_2SO_4 \rightarrow KHSO_4 + HNO_3$$

$$4HNO_3 \rightarrow 2H_2O + \underset{\text{Brown}}{4NO_2} + O_2$$

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Q-5 - 11481459

A white metal sulphide soluble in water is

(A) CuS

(B) Na_2S

(C) PbS

(D) ZnS

CORRECT ANSWER: B

SOLUTION:

Alkali metal salts are water solution

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Q-6 - 11481464

The colour developed when sodium sulphide is added to sodium nitroprusside is

(A) Violet

(B) yellow

(C) Red

(D) Black

CORRECT ANSWER: A

SOLUTION:

$$
\begin{aligned}
& N_2S \\
& + Na\left[Fe(CN)_{92}\right)NO \\
& \Bigg] \\
& \rightarrow Na_4\left[Fe(CN)_5NOS\right] \\
& \qquad (\text{Violet})
\end{aligned}
$$

Q-7 - 11481466

Using dil HCI, which of the following radical cannot be confirmed

(A) S^{2-}

(B) $S_2O_3^{2-}$

(C) CO_3^{2-}

(D) $NO_2^?$

CORRECT ANSWER: C

SOLUTION:

$$S^{2-} + 2HCI \xrightarrow{\Delta} \underset{\text{Rotten egg smell}}{H_2S \downarrow} + 2CI^{\Theta}$$
$$\text{(Specific smell)}$$

$$S_2O_3^{2-} + 2HCI \xrightarrow{Delat} \underset{\text{Suffocating smell of burning sulphur}}{SO_2 \uparrow} + 2CI^{\Theta}$$
$$+ \underset{\text{Yellow turbidity or white turbidity}}{S \downarrow} + H_2O$$

$$CO_3^{2-} + 2HCI \xrightarrow[\text{or } cold]{\Delta} \underset{\text{Odourless gas evolves with brisk effervescenes}}{CO_2 \uparrow} + H_2O + 2CI^{\Theta}$$
$$HCO_3^{\Theta} \text{ also behacve similarly}$$

Q-8 - 11481472

A white precipitate insoluble in cone HNO_3 is formed when aqueous solution of X $NaOH$ treated with barium chlorid and bromic water .The X is

(A) SO_3

(B) SO_2

(C) CO_2

(D) None of these

CORRECT ANSWER: B

SOLUTION:

$$SO_2 + 2NaOH \rightarrow Na_2SO_3 + H_2O$$

$$Na_2SO_3 + BaCI_2 \rightarrow BaSO_4 + 2NaCI$$

$$Br_2 + H_2O \rightarrow 2HBr + [O]$$

$$BaSO_3 + [O] \rightarrow \underset{\text{Whiteppt.(insoluble in conc.}HNO_3}{BaSO_4}$$

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Q-9 - 11481475

Which of the followi9ng pair of acid redicals can be distinguished by using dil H_2SO_4?

(A) $C_2O_4^{2-}$ and $NO_3^?$

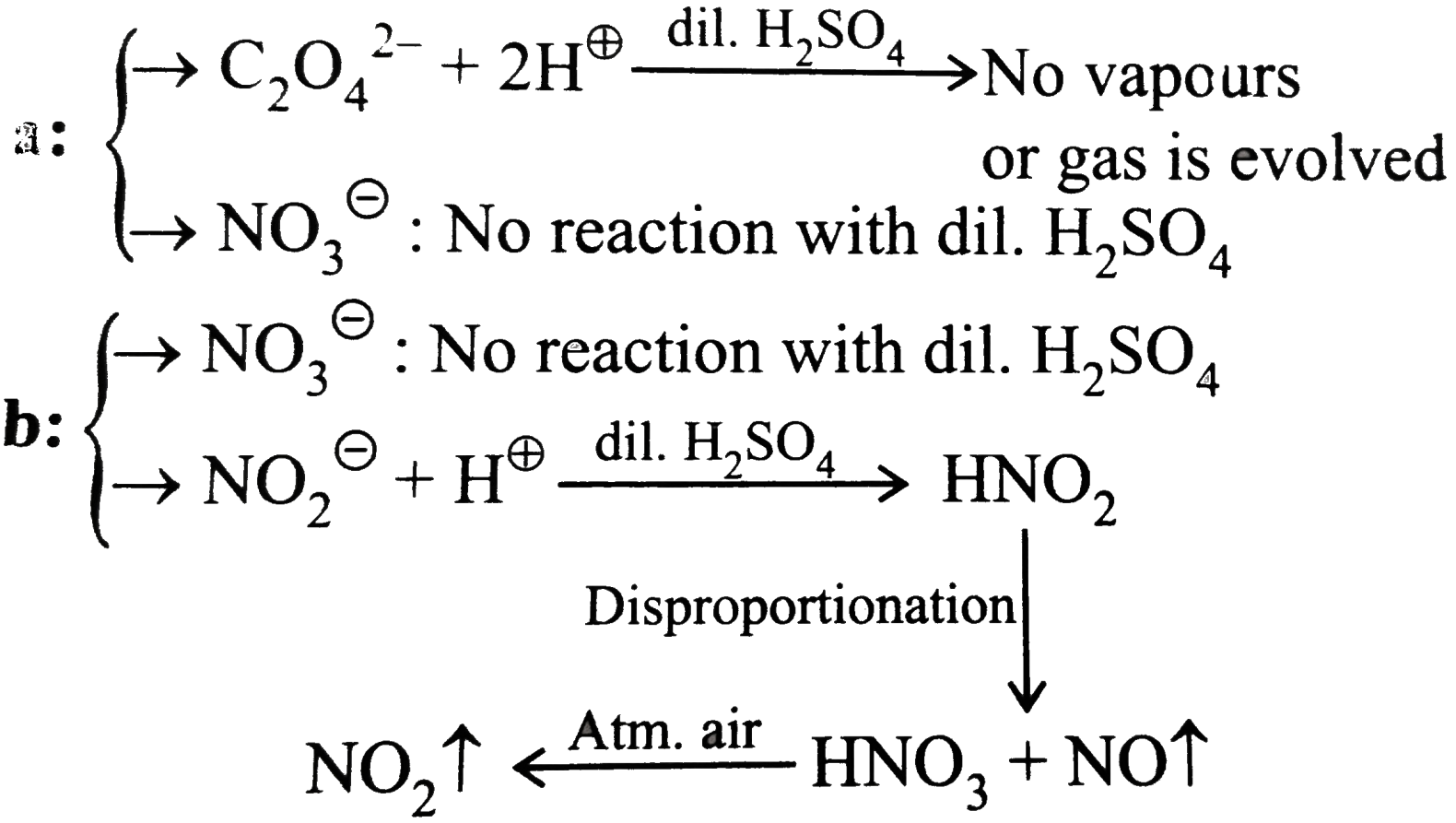
(B) $NO_3O_4^?$ and $NO_2^?$

(C) $CI^?$ and $Br^?$

(D) $HCO_3^?$ and CO_3^{2-}

CORRECT ANSWER: B

SOLUTION:



Hence ,distincition is possible

c. Both CI^{Θ} and Br^{Θ} have no reaction with dil H_2SO_4

d.Both HCO_3^{Θ} and CO_3^{2-} produce $CO_2\uparrow$ which evolved with effecrescences

Q-10 - 11481477

The aqueous solution of salt gives white ppt with lead aceetate

solution which is insolution in but water and nitric acid .The salt contains

(A) $CI^{?}$

(B) Br^{2+}

(C) CO_3^{2+}

(D) SO_4^{2-}

CORRECT ANSWER: D

SOLUTION:

$PbSO_4$ is white and insoluble in $HNO_2$and hot water

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Q-11 - 11481479

For testing sodium carbonate solution for the present of suplhiate

ions as impurities one should add :

(A) Excess hydrochloric acid and silver nitrate solution

(B) Excess sulpharic acid and silver nitrate solution

(C) Excess nitric acid and silver nitrate solution

(D) Excess hydrochloric acid and barium chliride solution

CORRECT ANSWER: D

SOLUTION:

$$SO_4^{2-} + BaCI_2 \rightarrow \underset{(\text{White ppt})}{BaSO_4} + 2CI^{\Theta}$$

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Q-12 - 19296786

The compound formed in the borax bead test of Cu^{2+} ion in oxidising flame is :

(A) Cu

(B) $CuBO_2$

(C) $Cu(BO_2)_2$

(D) None of these

CORRECT ANSWER: C

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Q-13 - 20220583

which cation cannot be identified by flame test ?

(A) Na^+

(B) K^+

(C) Ba^{2+}

(D) Mg^{2+}

CORRECT ANSWER: D

SOLUTION:

Mg^{2+} ion cannot be identified by flame test.

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Q-14 - 18103941

The most that does not give the borax bead test

(A) Chromium

(B) Nickel

(C) Lead

(D) Manganese

CORRECT ANSWER: 3

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Q-15 - 41414963

Which of the following salt will evolve sulphur dioxide gas along with formation of yellowish turbidity when treated with dilute H_2SO_4 ?

(A) Sodium sulphide

(B) Sodium sulphite

(C) Sodium thiosuphate

(D) Sodium sulphate

CORRECT ANSWER: C

SOLUTION:

$$S_2O_3^{2-} + \text{dil.}H_2SO_4 \xrightarrow{\Delta} SO_2 \uparrow$$

(Suffocating gas)

$$2Cl^- + S$$

$$\downarrow$$

$$(\text{yellow turbidity or white turbidity}) + H_2O$$

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Q-16 - 19296815

In the reactions,

$$K_2Cr_2O_7 + KCl$$

$$+ \text{conc.} H_2SO_4 \xrightarrow{\text{heat}} A$$

$$\xrightarrow{NaOH} B$$

.

'A' is reddish brown gas soluble in NaOH forming B. A and B are

---

CORRECT ANSWER: 1

SOLUTION:

$$K_2Cr_2O_7 + 4KCl + 6H_2SO_4 \rightarrow 6KHSO_4 + 2CrO_2Cl_2 + 3H_2O$$

$$Reddishbrowngas(A)$$

Q-17 - 19296644

A salt gives violet vapours when treated with conc. H_2SO_4, it contains ?

(A) Cl^-

(B) I^-

(C) Br^-

(D) NO_3^-

CORRECT ANSWER: 2

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Q-18 - 11481807

In group V ,$(NH_4)_2CO_3$ is added to precipitate out the carbonate

Na_2CO_3 is not added because

(A) $CaCO_3$ is soluble in $NaCO_3$

(B) $MgCO_3$ will be ppt out in group V

(C) Na_2CO_3 increases the solublity of group V carbonates

(D) All

CORRECT ANSWER: D

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Q-19 - 23547262

A white solid is first heated with dil H_2SO_4 and then with conc. H_2SO_4. No action was observed in either case. The solid salt contains:

(A) sulphate

(B) sulphite

(C) thiosulphate

(D) sulphate

CORRECT ANSWER: D

Q-20 - 19296899

When dimethyl glyoxime solution is added to an aqueous solution of nickel (II) chloride followed by ammonium hydroxide

(A) no precipitate is obtained

(B) a blue coloured ppt is obtained

(C) a red coloured ppt is obtained

(D) a black coloured ppt is obtained

CORRECT ANSWER: 3

SOLUTION:

Add NH_4OH (excess) and dimethyl glyoxime, a red precipitate appears, if nickel is present

Q-21 - 23690778

Salt used for performing bead test in qualitative inorganic analysis is

(A)

K_2SO_4

. $Al_2(SO_4)_3.24H_2O$

(B)

$FeSO_4$

. $(NH_4)_2SO_4.6H_2O$

(C) $Na(NH_4)HPO_4.4H_2O$

(D) $CuSO_4.5H_2O$

CORRECT ANSWER: C

SOLUTION:

Microcosmic salt $Na(NH_4)HPO_4.4H_2O$ can be used in the bead test.

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Q-22 - 41533647

The only cations present in a slightly acidic solution are Fe^{3+}, Zn^{2+} and Cu^{2+}. The regent that when added in excess to this solution would identify and separate Fe^{3+} in one step is

(A) 2M HCl

(B) 6M NH_3

(C) 6 M NaOH

(D) H_2S gas

SOLUTION:

$$Fe^{3+} + Zn^{2+} + Cu^{2+} \xrightarrow{6M\,NH_3} \underset{\text{Brown ppt.}}{Fe(OH)_3} + \underset{\text{Soluble}}{\left[Zn(NH_3)_4\right]^{2+}} + \underset{\text{Soluble}}{\left[Cu(NH_3)_4\right]^{2+}}$$

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Q-23 - 30686367

How do we differentiate between Fe^{3+} and Cr^{3+} in group lll?

(A) By taking excess of NH_4OH

(B) By increasing NH_4^+ ion concentration

(C) By decreasing OH^- ion concentration

(D) Both (B) and (C)

CORRECT ANSWER: D

SOLUTION:

In a group III of analysis, addition of NH_4Cl increases NH_4^+ ion concentration produced from NH_4OH due to common ion effect.

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Q-24 - 20220597

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

(A) HgS

(B) $HgS + Hg_2S$

(C) $HgS + Hg$

(D) Hg_2S

CORRECT ANSWER: C

SOLUTION:

$$Hg_2Cl_2 + H_2S \rightarrow \underset{(ppt)}{2HCl + HgS} + Hg$$

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Q-25 - 19296843

The brown ring test for nitrates depends on

(A) oxidation of NO to NO_2

(B) the reduction of nitrate to nitric oxide

(C) reduction of ferrous sulphate to iron

(D) oxidising action of sulphuric acid

CORRECT ANSWER: 2

Q-26 - 11481493

Strongly acidified solution of barium give a white precipitate with which did not dissolve even after large addition of water

(A) Sodium phosphate

(B) Sodium carbonate

(C) Sodium salphate

(D) Sodium chloride

CORRECT ANSWER: C

SOLUTION:

$BaSO_4$ is insoluble in acidic medium

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Q-27 - 23547267

In the precipitation of the iron group in qualitative analysis, ammonium chloride is added before adding ammonium hydroxide to:

(A) decrease concentration of OH^- ions

(B) prevent interference by phosphate ions

(C) increase concentration of CI^- ions

(D) increase concentration of NH_4^+ ions

CORRECT ANSWER: A

SOLUTION:

$[OH^-$ $\downarrow$ due to common ion effect.

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Q-28 - 11481499

Excess of concentrated sodium hydroxide can separate 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+}

CORRECT ANSWER: B

SOLUTION:

AI^{2+}, Zn^{2+} and Cr^{2+} form a soluble complex with excess of $NaOH$ whereas Fe^{2+} does not

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Q-29 - 41533508

Lead has been placed in the group I and II because

(A) it shows the valency of one and two

(B) it forms insoluble $PbCl_2$

(C) it forms lead sulphide

(D) it is partially soluble in water

SOLUTION:

$PbCl_2$ is partially soluble in water and dissolves completely only in hot water. So , part of it goes to group II, Where it is precipitated as PbS.

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Q-30 - 33103525

A black sulphide is formed by the action of H_2S on:

(A) cupric chloride

(B) cadmium chloride

(C) zinc chloride

(D) ferric chloride

CORRECT ANSWER: A

SOLUTION:

(A)

$$Cu^{2+} + S^{2-} \rightarrow CuS$$

$$\downarrow$$

(black),

(B)$Cd^2 + S^{2-} \rightarrow CdS\downarrow$ (yellow)

(C)

$$Zn^{2+} + S^{2-} \rightarrow ZnS$$

$$\downarrow$$

(white)

(D)

$$2Fe^{3+} + H_2S \rightarrow 2Fe^{2+} + 2H^+ + S\downarrow$$

(milky white)

Q-31 - 11481524

Addition of $SnCl_2$ to $HgCI_2$ gives ppt. :

(A) white turning to grey

(B) Black turning to white

(C) white turning to red

(D) None of these

CORRECT ANSWER: A

SOLUTION:

$HgCI_2$ formed is white which later on turns to Hg grey due to father reduction

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Q-32 - 11481533

Few drop of HNO_3 are added to group if before precoodinh to group III in order to :

(A) Covert Fe^{2+} to Fe^{3+}

(B) ConvertFe^{3+} to Fe^{2+}

(C) ppt group III

(D) None of these

CORRECT ANSWER: A

SOLUTION:

Fe^{2+} is oxidised in Fe^{3+} in order to precipitate $Fe(OH)_3$

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Q-33 - 11481527

In qualitative inorganic analysis of basic radicals ydochioric acid is

preferred to nitric acid for preparing a solution of given substance

.This is because :

(A) Nitrates are not decomposed to selphides

(B) Nitric acid contain nitrogen

(C) Hydrocholoric acid is not an oxidesing agent

(D) Choride are easly of converted to sulphides

CORRECT ANSWER: C

SOLUTION:

HNO_3 is as oxidesing ugent but HCI is not

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Q-34 - 12975007

The formula of the compound which gives violet color in

Lassaigne's test for sulphur with sodium nitroprusside is

(A) $Na_4\left[Fe(CN)_6S\right]$

(B) $Na_4\left[Fe(CN)_5NCS\right]$

(C) $Na_4\left[Fe(CN)_5NOS\right]$

(D) $Na_2\left[Fe(CN)_5NOS\right]$

CORRECT ANSWER: C

SOLUTION:

$$Na_2S + \underset{\text{Sodium nitroprusside}}{Na_2\left[Fe(CN)_5NO\right]} \rightarrow \underset{\text{Deep violet color}}{\left[Na_4\left[Fe(CN)_5NOS\right]\right]}$$

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Q-35 - 18238743

$MgSO_4$ on reaction with NH_4OH and Na_2HPO_4 forms a white crystalline . What is its formula?

(A) $Mg(NH_4)PO_4$

(B) $Mg_3(PO_4)_2$

(C) $MgCl_2, MgSO_4$

(D) $MgSO_4$

CORRECT ANSWER: 1

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Q-36 - 12661472

Nessleers reagent is

(A) K_2HgI_4

(B) $K_2HgI_4 + KOH$

(C) $K_2HgI_2 + KOH$

(D) $K_2HgI_4 + Hg$

CORRECT ANSWER: B

SOLUTION:

$$2Kl + H_2I_2 \rightarrow \underbrace{K_2Hgl_4 + KOH}_{\text{Nesslers reagent}}$$

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Q-37 - 11479639

From the following information

$X + H_2SO_4 \rightarrow Y$ (a colourless and irritating gas)

$Y + K_2Cr_2O_7 + H_2SO_4 \rightarrow$ green coloured solution Identify the pair X and Y.

(A) $Cl^?, HCl$

(B) So_3^{2-}, SO_2

(C) S^{2-}, H_2S

(D) CO_3^{2-}, CO_2

CORRECT ANSWER: B

SOLUTION:

$$\underset{(X)}{SO_3^{2-}} + 2H^{\oplus} \rightarrow \underset{(Y)}{SO_2} + H_2O$$

$$3SO_2 + K_2Cr_2O_7 + H_2SO_4 \rightarrow K_2SO_4 + Cr_2(SO_4)_3 + H_2O$$

Green coloured solution

.

When Kl is added to acidified solution fo 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

CORRECT ANSWER: A

SOLUTION:

$$NO_2^- + 2I^- + 4CH_3COOH \rightarrow I_2 + 2NO \uparrow + 4CH_3COO^- + 2H_2O$$

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Q-39 - 11481740

Yellow coloured solution of $FeCI_3$ changes in light green when

(A) $SnCI_2$ is added

(B) $Zn$is added

(C) H_2S gas is added

(D) All true

CORRECT ANSWER: D

Q-40 - 11481741

Fe^{2+} does not give blue colour with $K_4\left[Fe(CN)_6\right]$ but on its reaction with (X) ,blue colour oppears (X) can be

(A) $MnO_4^{\ominus} / H^{\oplus}$

(B) H_2SO_4

(C) NH_3

(D) HCI

CORRECT ANSWER: A

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Q-41 - 11481744

Turnbull's blue and Prassian's blue respectively are I.

$Fe^{II}\left[Fe^{II}(CN)_6\right]^{2-}$,II.$Fe^{III}\left[Fe^{III}(CN)_6\right]$,III.

$Fe^{II}\left[Fe^{III}(CN)_6\right]^{\Theta}$,II.$Fe^{III}\left[Fe^{II}(CN)_6\right]^{\Theta}$,II

(A) I,III

(B) I,III

(C) III,IV

(D) IV,III

CORRECT ANSWER: C

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Q-42 - 11481746

A mixture on heating gave a gas used as an anaesthetic soluble in water forming cis , and trans dibasic acid $1.1g$ of gas occupes $0.56atSTP$ mixture contain

(A) $NaNO_3 + NH_4CI$

(B) $NaNO_2 + NH_4CI$

(C) $CaCO_3 + MgCO_3$

(D) $NH_4CI + NaSO_4$

CORRECT ANSWER: A

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Q-43 - 11481745

Which of the following are soluble in excess of $NaOH$

(X) :As_2S_3 ,(Y) : CuS ,(Z) : $AICI_3$

(A) X,Y,Z

(B) Y,Z

(C) X,Z

(D) X,Y

CORRECT ANSWER: C

Q-44 - 11481760

$CoCI_2$ gives blue colour with NH_4SCN due to formation of

(A) $(NH_4)_2[Co(SCN)_4]$

(B) $(NH_4)_4[Co(SCN)_6]$

(C) $(NH_4)_3[Co(SCN)_6]$

(D) $(NH_4)[Co(SCN)_4]$

CORRECT ANSWER: A

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Q-45 - 14625775

Ferric alum gives deep red colour with NH_4SCN due to the formation of :

(A) $Al(SCN)_3$

(B) $[Fe(SCN)_3]^-$

(C) $Fe(SCN)_3$

(D) None of these

CORRECT ANSWER: 3

SOLUTION:

Ferric alum contains Fe^{3+} ion

, $Fe^{3+} + 3SCN^{-}$

$\rightarrow Fe(SCN)_3$

$(\text{deep red colouration})$

.

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Q-46 - 11481761

$HgCI_2 + \text{excess of} KI$

$\rightarrow (A) \xrightarrow[NH_3]{} (B)$

,(A) and (B) respectively are

(A)

(B) $(Y), (X)$

(C) both (X)

(D) both (Y)

CORRECT ANSWER: A

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Q-47 - 11481780

Ring test for mirates conformed by acidifying prepared $FeSO_4$ soin a brown ring is formed that to the formation of $\left[Fe(H_2O)_3NO[SO_4\right.$ This rest should not be performed for nitrate ion in presence of

(A) NO_2^{Θ}

(B) Bi^{Θ}

(C) I^{Θ}

(D) All

CORRECT ANSWER: D

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Q-48 - 11481771

A mixture when heated with dil H_2SO_4 does not coolve brown vapours but with cone H_2SO_4 brown with $AgNO_3$ soin do not give any precipitate .The mixture contain

(A) NO_2^{Θ}

(B) NO_3^{Θ}

(C) I^{Θ}

(D) Br^{Θ}

CORRECT ANSWER: B

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Q-49 - 11481804

Cone HNO_3 is added before proceeding to test for group II This is to

(A) Convent Fe^{+2} ion Fe^{+3} ion

(B) Oxidise any remaining H_2S

(C) From nitrate which give grandar precipitate

(D) Increases ionisation of NH_4OH

CORRECT ANSWER: A

Q-50 - 15199600

The ion that cannot ne precipitated by both HCl and H_2S is

(A) Pb^{2-}

(B) Cu^{+}

(C) Ag^+

(D) Sn^{2+}

CORRECT ANSWER: C

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Q-51 - 30709239

The pair of compounds which cannot exist in solution is:

(A) $NaHCO_3$ and H_2O

(B) Na_2CO_3 and $NaOH$

(C) $NaHCO_3$ and $NaOH$

(D) $NaHCO_3$ and Na_2CO_3

CORRECT ANSWER: C

SOLUTION:

$NaHCO_3$ is an acid salt. It reacts with $NaOH$ to form

salt and water.

$$NaHCO_3 + NaOH \rightarrow Na_2CO_3 + H_2O$$

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Q-52 - 11468955

Which of the following is insoluble in acetic acid?

(A) $CaCO_3$

(B) CaC_2O_4

(C) $Ca(OH)_2$

(D) CaO

CORRECT ANSWER: B

SOLUTION:

CaC_2O_4 being a salt of $Ca(OH)_2$ and $H_2C_2O_4$ is insoluble in acetic acid.

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Q-53 - 11480585

Which of the following is formed when excess of KCN is added to an aqueous solution of copper sulphate?

(A) $Cu(CN)_2$

(B) $K_2\left[Cu(CN)_4\right]$

(C) $K\left[Cu(CN)_2\right]$

(D) $K_3\left[Cu(CN)_4\right]$

CORRECT ANSWER: D

SOLUTION:

When excess of KCN is added to an aqueous solution

of copper sulphate, $K_3\left[Cu(CN)_4\right]$ is formed.

$CuSO_4 + 2KCN$

$\rightarrow CN(CN)_2$

$+ K_2SO_4$

$2Cu(CN)_2$

$\rightarrow Cu(CN)_2$

$+ (CN)_2$

$Cu_2(CN)_2 + 6KCN$

$\rightarrow 2K_3\left[Cu\{CN)_4\right]$

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Q-54 - 11480586

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

CORRECT ANSWER: C

SOLUTION:

In the presence of peroxide,chromium ions are oxidised to chromate ions which give a yellow filtrate. Ferric ions form brown precipitate of $Fe(OH)_3$.

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Q-55 - 15199593

A gas X is passed through water to form a saturated solution. The aqueous solution on treatment with silver nitrate gives a white

precipitate. The saturated aqueous solution also dissolves magnesium ribbon with evolution of a 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) $X = H_2, Y = Cl_2$

CORRECT ANSWER: C

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Q-56 - 15199592

$[X] + H_2SO_4 \rightarrow [Y]$ a colourless gas with irritating smell

$[Y] + K_2Cr_2O_7 + H_2SO_4$

$\rightarrow$

green solution $[X]$ and $[Y]$ are

(A) SO_3^{2-}, SO_2

(B) Cl^-, HCl

(C) S^{2-}, H_2S

(D) CO_3^{2-}, CO_2

CORRECT ANSWER: A

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Q-57 - 15199586

$CuSO_4$ decolourises on addition of KCN, the product is

(A) $\left[Cu(CN)_4\right]^{2-}$

(B) Cu^{2+} get reduced to form $\left[Cu(CN)_4\right]^{3-}$

(C) $Cu(CN)_2$

(D) $CuCN$

CORRECT ANSWER: B

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Q-58 - 15199582

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) Cus and HgS

(B) MnS and CuS

(C) MnS and NiS

(D) NiS and HgS

CORRECT ANSWER: A

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Q-59 - 20220593

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) $Na_2S > ZnS > CuS$

CORRECT ANSWER: D

SOLUTION:

Sodium sulphide (Na_2S) is a strong electrolyte and it readily ionises in aqueous solution. Out of ZnS and CuS, the latter gets precipitated more easily because its $ksp\left(8.5 \times 10^{-45}\right)$ is less than that of $ZnS\left(2.5 \times 10^{-22}\right)$. Therefore the correct order of solubility is: $Na_2S > ZnS > CuS$

Q-60 - 11481455

Which reagent is used to remove SO_4^{2-} or CI^{Θ} from water

(A) $NaOH$

(B) $Pb(NO_3)_2$

(C) $BaSO_4$

(D) KOH

CORRECT ANSWER: B

SOLUTION:

$PbSO_4$ and $PbCI_2$ are insoluble in cold water