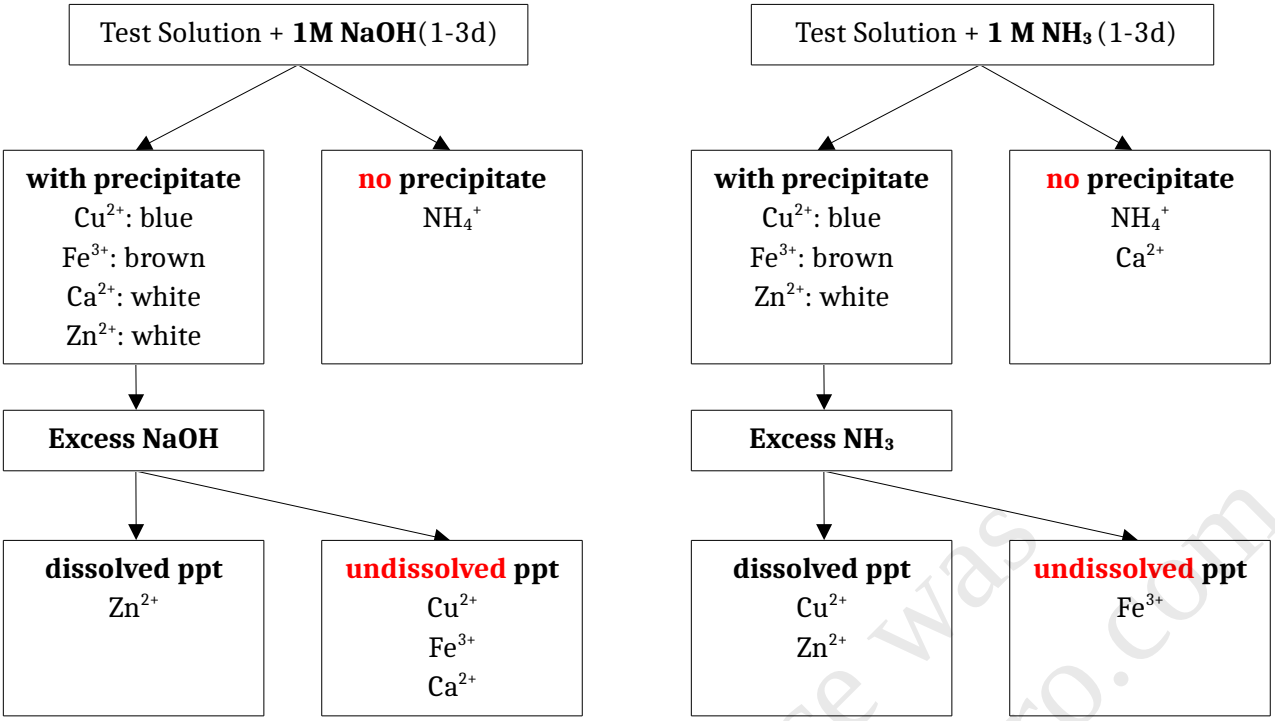
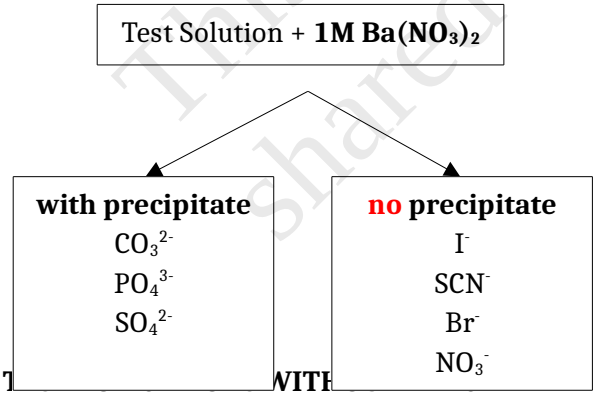
TEST FOR CATIONS



CONFIRMATORY TEST FOR CATIONS

1. Cu^{2+}: test solution + excess NH_3 = deep blue complex
2. Fe^{3+}: test solution + 0.1M KSCN = blood red complex
   test solution + $K_4Fe(CN)_6$ = dark blue precipitate
3. Ca^{2+}: test solution + 0.1M $(NH_4)_2C_2O_4$ = white precipitate
4. NH_4^+: test solution in evap dish + 1M NaOH --> cover with watch glass w LP--> red-->blue
5. Zn^{2+}: test solution + $K_3Fe(CN)_6$ = yellow precipitate
   test solution + $K_4Fe(CN)_6$ = white precipitate

TEST FOR ANIONS

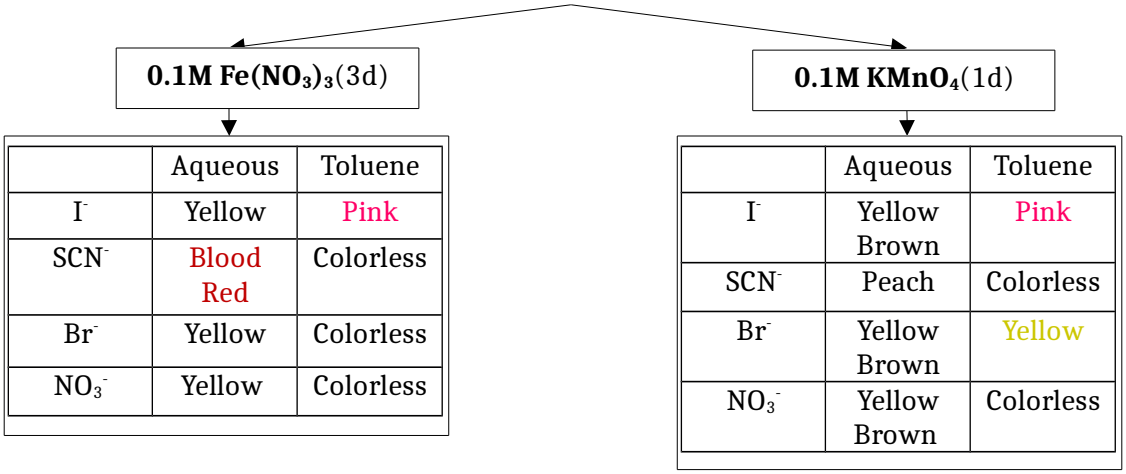


T WITH

Test Solution + 1M HNO_3(2d) + **x** + toluene(5d)

CONFIRMATORY TEST FOR ANIONS

1. CO_3^{2-}: ppt + 1M CH_3COOH =
   ppt dissolves with effervescence
2. PO_4^{3-}: ppt + 1M CH_3COOH =
   ppt dissolves without effervescence
   test solution + 0.1M $MgCl_2$ =
   white precipitate
3. SO_4^{2-}: ppt + 1M CH_3COOH =
   ppt remains undissolved



	Aqueous	Toluene
I^-	Yellow	Pink
SCN^-	Blood Red	Colorless
Br^-	Yellow	Colorless
NO_3^-	Yellow	Colorless

	Aqueous	Toluene
I^-	Yellow Brown	Pink
SCN^-	Peach	Colorless
Br^-	Yellow Brown	Yellow
NO_3^-	Yellow Brown	Colorless

CONFIRMATORY TEST FOR ANIONS

1. I^-: test solution + 1M HNO_3 + 0.1M $Fe(NO_3)_3$ + toluene = pink toluene layer
2. SCN^-: test solution + 1M HNO_3 + 0.1M $Fe(NO_3)_3$ + toluene = blood red aqueous layer
3. Br^-: test solution + 1M HNO_3 + 0.1M $KMnO_4$ + toluene = yellow/orange toluene layer
4. NO_3^-: test solution + 6M H_2SO_4(1d), $FeSO_4$(3d)--> tilt to 60° --> 18M H_2SO_4(1d)= brown ring