SYSTEMATIC ANALYSIS OF SIMPLE SALT- I			
S NO	**Experiment**	**Observation**	**Inference**
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper sulphate, iron salt
2.	**Action of heat:** A small amount of a salt is heated in a test tube	A reddish brown gas with a fishy odour evolves	Presence of a nitrate salt
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic Colour flame Observed.	Absence of a copper, barium, calcium
4.	**Action of dil. HCl:** Small amount of salt + 1mL of dil. HCl . Gently heat it	A reddish brown gas with the fishy odour turning a moist ferrous sulphate paper brownevolves	Presence of nitrate
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	Reddish brown gas turning acidified ferrous sulphate paper green evolves.	Presence of nitrate
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	No Characteristic Change is Observed.	Absence of chloride, bromide
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	A reddish brown gas with fishy odour turning a moist ferrous sulphate paper brown evolves	Presence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange is Observed.	Absence of chloride.

Analysis with Sodium carbonate extract

Preparation of Sodium carbonate extract

Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.

10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO3 + 1ml of AgNO3, and shake it	No Characteristic ppt is Observed.	Absence of chloride, bromide, sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	No white ppt is formed	Absence of sulphate
12	**Test with lead acetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1ml of lead acetate	No white ppt is formed	Absence of sulphate
13	**Brown ring test:** 1ml o f the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	A brown ring is formed	Presence of nitrate confirmed.
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitrobruside.	No purple or violet colouration appears	Absence of sulphide.

Preparation of salt solution:

To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.

1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1mL of dil HCl, and shake it	A White ppt is formed.	Presence of 1st group metal ions (Pb^{2+})

Analysis of the 1st group ppt:

	To the ppt add about 1ml of water and boil it	The ppt dissolves	Presence of Lead

1	**Test for Lead:** To one portion of the hot solution add about 1ml of K_2CrO_4	A yellow ppt is obtained	Presence of Lead
2	To an another portion of the hot solution add about 1ml of KI. To the yellow ppt add about 1ml of water, boil and cool.	A yellow ppt is obtained.The yellow ppt dissolves on boiling , and on cooling golden spangles appear	Presence of lead is confirmed.
Result: The Anion Present : NITRATE The cation Present : LEAD The Given simple salt : LEAD NITRATE			

SYSTEMATIC ANALYSIS OF SIMPLE SALT-II

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Blue	May be copper sulphate
2.	**Action of heat:** A small amount of a salt is heated in a test tube	Blue Changes into White due to dehydration	May be copper sulphate
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	Bluish green flame.	Presence of a Copper salt
4.	**Action of dil. HCl:** Small amount of salt + 1mL of dil. HCl . Gently heat it	No Charactristic gas evolves	Absence of Carbonate,Nitrate, Sulphide
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	No Charactristic gas evolves	Absence of Chloride, Bromide, Nitrate
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc. H_2SO_4 and gently heat it	No Characteristic Gas is evolved.	Absence of chloride, bromide
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.

8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	No Characteristic ppt is Observed.	Absence of chloride, bromide, sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of barium chloride solution and shake	A white ppt insoluble in dil H_2SO_4 is formed	Prsence of sulphate is Confirmed.
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	A whit ppt soluble in excess of ammonium acetate is formed	Presence of sulphate
13	**Brown ring test:** 1ml of the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of Nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1mL each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of Phosphate
15	**Test with sodium nitro bruside:** 1ml of the sodium carbonate extract + 1ml of dil. aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.			

1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler's reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	A Black ppt is formed	Presence of 2nd group metal ions (Cu^{2+})
Analysis of the 2nd group ppt:			
1	**Test for copper:** i). To one portion of the solution add ammonium hydroxide	No ppt is obtained, but the solution is blue	Presence of Copper
2	ii) To the blue coloured solution add about 1ml each of acetic acid and potassium ferro cyanide	A red brown ppt is obtained	Presence of Copper Confirmed

Result:
The Anion Present : SULPHATE
The cation Present : COPPER
The Given simple salt : COPPER SULPHATE

SYSTEMATIC ANALYSIS OF SIMPLE SALT-III

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Green	May be Copper Carbonate
2.	**Action of heat:** A small amount of a salt is heated in a test tube	A colourless, odourless gas turning lime water milky evolves	Presence of carbonate
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	Bluish green flame.	Presence of a copper salt
4.	**Action of dil. HCl:** Small amount of salt + 1mL of dil. HCl . Gently heat it	A colourless, odourless gas evolves as a brisk Effervescence and turns lime water milky	Presence of carbonate is Confirmed
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	No Charactristic gas evolves	Absence of Chloride, Bromide, Nitrate

6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc. H_2SO_4 and gently heat it	No Characteristic Gas is evolved.	Absence of chloride, bromide
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	No Characteristic ppt is Observed.	Absence of chloride, bromide, sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of barium chloride solution and shake	No white ppt is obtained	Absence of sulphate
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	No white ppt is obtained	Absence of sulphate
13	**Brown ring test:** 1ml of the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of phosphate

15	**Test with sodium nitro bruside:** 1ml of the sodium carbonate extract + 1ml of dil. aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of dil. HCl, shake it and gently heat it. This solution is called “original solution”.			
1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	A Black ppt is formed	Presence of 2nd group metal ions (Cu^{2+})
Analysis of the 2nd group ppt:			
1	**Test for copper:** i). To one portion of the solution add ammonium hydroxide	No ppt is obtained, but the solution is blue	Presence of Copper
2	ii) To the blue coloured solution add about 1ml each of acetic acid and potassium ferro cyanide	A red brown ppt is obtained	Presence of Copper Confirmed
Result: The Anion Present : CARBONATE The cation Present : COPPER The Given simple salt : COPPER CARBONATE			

SYSTEMATIC ANALYSIS OF SIMPLE SALT- IV

S NO	Experiment	Observation	Inference
Analysis of anions			
1	**Colour:** Note the colour of the salt	Brown	May be an iron salt
2.	**Action of heat:** A small amount of a salt is heated in a test tube	No Characteristic Change Occurs	Absence of Zinc, Ammonium, Nitrate

3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic flame Colour is Observed.	Absence of Copper, Barium, Calcium
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	No Charactristic gas evolves	Absence of Carbonate,Nitrate, Sulphide
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	A colourless gas evolves. It gives a dense white fumes when a glass rod dipped in liquid ammonia is brought close to its mouth	Prsence of Chloride
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	A greenish yellow gas turning starch iodide paper blue evolves	Prsence of Chloride
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H2SO4.Gently heat it. Pass the vapours into dilute sodium hydroxide solution. If a yellow solution is obtained, add dil. Acetic acid and lead acetate	A yellow ppt is obtained	Presence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	A curdy white ppt insoluble in dil. Ammonia is formed	Presence of chloride

11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	No white ppt is obtained	Absence of sulphate
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	No white ppt is obtained	Absence of sulphate
13	**Brown ring test:** 1mL o f the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc.HNO_3	No canary yellow ppt is formed.	Absence of phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.			
1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl, NH_4OH and shake it well	A brown ppt is formed	presence of 3rd group metal ions (Fe^{3+})
Analysis of the 3rd group ppt:			
1	To the ppt add a pinch of sodium peroxide and boil it	A red or brown ppt is obtained	Presence of Iron

2	i.) To one portion of the red ppt add about 1mL of dil HCl and boil it and then add about 1ml of potassium ferocyanide	A blue ppt is obtained	Presence of Iron is Confirmed
3	ii.) To an another portion of the ppt add about 1mL of dil. HNO_3 boil it and then add about 1ml of KCNS	A blood red colouration is seen	Presence of Iron is Confirmed

Result:
The Anion Present : CHLORIDE
The cation Present : FERRIC
The Given simple salt : FERRIC CHLORIDE

SYSTEMATIC ANALYSIS OF SIMPLE SALT- V

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts
2.	**Action of heat:** A small amount of a salt is heated in a test tube	No Characteristic Change Occurs	Absence of Zinc, Ammonium, Nitrate
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic flame Colour is Observed.	Absence of Copper, Barium, Calcium
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	No Charactristic gas evolves	Absence of Carbonate,Nitrate, Sulphide
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	No Charactristic gas evolves	Absence of Chloride, Bromide, Nitrate
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	No Characteristic Gas is evolved.	Absence of chloride, bromide

7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	No Characteristic ppt is Obtained.	Absence of chloride, bromide, sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	A white ppt insoluble in dil H_2SO_4 is formed	Prsence of sulphate is Confirmed.
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	A whit ppt soluble in excess of ammonium acetate is formed	Presence of sulphate
13	**Brown ring test:** 1ml o f the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.

Preparation of salt solution:
To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.

1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl and NH_4OH and shake it well	A gelatinous white ppt is formed	Presence of 3rd group metal ion (Al^{3+})
Analysis of the 3rd group ppt:			
1	**Test for Aluminium:** To the ppt add a pinch of sodium peroxide and boil it	A colourless solution is obtained	Presence of Aluminium
2	To the colourless solution add dil.HCl and shake it	A gelatinous white ppt is obtained	Presence of Aluminium is Confirmed

Result:
The Anion Present : SULPHATE
The cation Present : ALUMINIUM
The Given simple salt : ALUMINIUM SULPHATE

SYSTEMATIC ANALYSIS OF SIMPLE SALT- VI

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts
2.	**Action of heat:** A small amount of a salt is heated in a test tube	A reddish brown gas with a fishy odour evolves	Presence of a nitrate salt
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic flame Colour is Observed.	Absence of Copper, Barium, Calcium

4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	A reddish brown gas with the fishy odour turning a moist ferrous sulphate paper brown evolves	Presence of nitrate
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	Reddish brown gas turning acidified ferrous sulphate paper green evolves.	Presence of nitrate
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	No Characteristic Gas is evolved.	Absence of chloride, bromide
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	A reddish brown gas with fishy odour turning a moist ferrous sulphate paper brown evolves	Presence of nitrate
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	No Characteristic ppt is Obtained.	Absence of chloride, bromide, sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	No white ppt is obtained	Absence of sulphate
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1ml of Lead Acetate	No white ppt is obtained	Absence of sulphate

13	**Brown ring test:** 1ml of the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	A brown ring is formed	Presence of nitrate confirmed
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of Phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.			
1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl and NH_4OH and shake it well	A gelatinous white ppt is formed	Presence of 3rd group metal ion (Al^{3+})
Analysis of the 3rd group ppt:			
1	**Test for Aluminium:** To the ppt add a pinch of sodium peroxide and boil it	A colourless solution is obtained	Presence of Aluminium
2	To the colourless solution add dil.HCl and shake it	A gelatinous white ppt is obtained	Presence of Aluminium is Confirmed

Result:
The Anion Present : NITRATE
The cation Present : ALUMINIUM
The Given simple salt : ALUMINIUM NITRATE

SYSTEMATIC ANALYSIS OF SIMPLE SALT- VII

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts
2.	**Action of heat:** A small amount of a salt is heated in a test tube	Salt is Yellow when hot, White when cold	May be a zinc salt
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic flame Colour is Observed.	Absence of Copper, Barium, Calcium
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	No Charactristic gas evolves	Absence of Carbonate,Nitrate, Sulphide
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	No Charactristic gas evolves	Absence of Chloride, Bromide, Nitrate
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	No Characteristic Gas is evolved.	Absence of chloride, bromide
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.

Analysis with Sodium carbonate extract

Preparation of Sodium carbonate extract

Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.

10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	No Characteristic ppt is Obtained.	Absence of chloride, bromide, sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	A white ppt insoluble in dil H_2SO_4 is formed	Prsence of sulphate is Confirmed.
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	A whit ppt soluble in excess of ammonium acetate is formed	Presence of sulphate
13	**Brown ring test:** 1ml o f the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of Nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of Phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.			
1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1mL of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl and NH_4OH and shake it well	No ppt is obtained	Absence of 3rd group metal ions (Al^{3+} / Fe^{3+})

	GROUP IV To the above solution pass (H_2S) gas	A dirty white ppt is obtained	Presence of 4 th group metal ion (Zn^{2+})
Analysis of the 4th group ppt:			
1	**Test for Zinc:** To the ppt add dil HCl and boil it	The ppt dissolves	Presence of Zinc
2	To the 1 ml of Original solution add dil.NaOH in drops to excess	White Ppt Soluble in excess NaOH is Obtained	Presence of Zinc is Confirmed
3	To the 1 ml of Original solution add 2 ml $K_4[Fe(CN)_6]$ solution	White Ppt Soluble in excess NaOH, insoluble in dilute acids, is Obtained	Presence of Zinc is Confirmed

Result:
The Anion Present : SULPHATE
The cation Present : ZINC
The Given simple salt : ZINC SULPHATE

SYSTEMATIC ANALYSIS OF SIMPLE SALT- VIII

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts
2.	**Action of heat:** A small amount of a salt is heated in a test tube	Salt is Yellow when hot, White when cold	May be a zinc salt
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic flame Colour is Observed.	Absence of Copper, Barium, Calcium
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	egg smell turning a paper dipped in lead acetate shining black evolves	Presence of sulphide is Confirmed
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	No Charactristic gas evolves	Absence of Chloride, Bromide, Nitrate
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	No Characteristic Gas is evolved.	Absence of chloride, bromide

7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	A black ppt is formed	Presence of sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	No white ppt is obtained	Absence of sulphate
12	**Test with lead acetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	No white ppt is obtained	Absence of sulphate
13	**Brown ring test:** 1ml o f the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	A purple or violet colouration appears	Prsence of sulphide.

Preparation of salt solution:
To a small amount of salt in a test tube, add 3ml of dil.HCl + dil.HNO_3, shake it and gently heat it. This solution is called "original solution".

1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler's reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl and NH_4OH and shake it well	No ppt is obtained	Absence of 3rd group metal ions (Al^{3+} / Fe^{3+})
	GROUP IV To the above solution pass (H_2S) gas	A dirty white ppt is obtained	Presence of 4 th group metal ion (Zn^{2+})

Analysis of the 4th group ppt:

1	**Test for Zinc:** To the ppt add dil HCl and boil it	The ppt dissolves	Presence of Zinc
2	To the 1 ml of Original solution add dil.NaOH in drops to excess	White Ppt Soluble in excess NaOH is Obtained	Presence of Zinc is Confirmed
3	To the 1 ml of Original solution add 2 ml $K_4[Fe(CN)_6]$ solution	White Ppt Soluble in excess NaOH, insoluble in dilute acids, is Obtained	Presence of Zinc is Confirmed

Result:
The Anion Present : SULPHIDE
The cation Present : ZINC
The Given simple salt : ZINC SULPHIDE

SYSTEMATIC ANALYSIS OF SIMPLE SALT- IX

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts
2.	**Action of heat:** A small amount of a salt is heated in a test tube	A colourless, odourless gas turning lime water milky evolves	Presence of carbonate

3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	Brick red Colour is Observed.	Presence of a calcium salt
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	A colourless, odourless gas evolves as a brisk Effervescence and turns lime water milky	Presence of carbonate is Confirmed
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	No Charactristic gas evolves	Absence of Chloride, Bromide, Nitrate
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	No Characteristic Gas is evolved.	Absence of chloride, bromide
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	No Characteristic ppt is Obtained.	Absence of chloride, bromide, sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	No white ppt is obtained	Absence of sulphate

12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	No white ppt is obtained	Absence of sulphate
13	**Brown ring test:** 1ml of the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of dil.HCl, shake it and gently heat it. This solution is called “original solution”.			
1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl, NH_4OH and shake it well	No ppt is obtained	Absence of 3rd group metal ions (Al^{3+} / Fe^{3+})
5	**GROUP IV** To the above solution pass (H_2S) gas	No dirty white ppt is obtained	Absence of 4 th group metal ion (Zn^{2+})
6	**GROUP V** To the salt solution add 1ml each of NH_4Cl, NH_4OH and $(NH_4)_2CO_3$ and shake it well.	A white ppt is obtained	Presence of 5th group metal ions (Ba^{2+}/ Ca^{2+})

Analysis of the 5th group ppt:			
1	To the ppt add about 1ml of dil. acetic acid and gently heat it.	The ppt dissolves.	Presence of (Ba2+/ Ca2+)
2	**Test for Calcium** To the solution add about 1ml of ammonium sulphate	A white ppt is obtained. Filter.To the residue add a drop of Conc. HCl. Take the residue and introduce near the Bunsen flame.A crimson red colour is seen	Presence of Calcium is Confirmed
		If no ppt is obtained, to the solution add about 1ml of potassium ferrocyanide and shake it. A pale yellow ppt appears.	Presence of Calcium is Confirmed

Result:
The Anion Present : CARBONATE
The cation Present : CALCIUM
The Given simple salt : CALCIUM CARBONATE

SYSTEMATIC ANALYSIS OF SIMPLE SALT- X

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts
2.	**Action of heat:** A small amount of a salt is heated in a test tube	No Characteristic Change Occurs	Absence of Zinc, Ammonium, Nitrate
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	Apple green Colour is Observed.	Presence of Barium salt
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	No Charactristic gas evolves	Absence of Carbonate,Nitrate, Sulphide
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	A colourless gas evolves. It gives a dense white fumes when a glass rod dipped in liquid ammonia is brought close to its mouth	Prsence of Chloride

6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	A greenish yellow gas turning starch iodide paper blue evolves	Prsence of Chloride
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of Nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H2SO4.Gently heat it. Pass the vapours into dilute sodium hydroxide solution. If a yellow solution is obtained, add dil. Acetic acid and lead acetate	A yellow ppt is obtained	Presence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	A curdy white ppt insoluble in dil. Ammonia is formed	Presence of chloride
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	No white ppt is obtained	Absence of sulphate
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	No white ppt is obtained	Absence of sulphate
13	**Brown ring test:** 1ml of the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of Nitrate

14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of Phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.			
1	**GROUP 0** 1ml of the original salt solution add about 1mL each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1mL of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl, NH_4OH and shake it well	No ppt is obtained	Absence of 3rd group metal ions (Al^{3+} / Fe^{3+})
5	**GROUP IV** To the above solution pass (H_2S) gas	No dirty white ppt is obtained	Absence of 4 th group metal ion (Zn^{2+})
6	**GROUP V** To the salt solution add 1ml each of NH_4Cl, NH_4OH and $(NH_4)_2CO_3$ and shake it well.	A white ppt is obtained	Presence of 5th group metal ions (Ba^{2+}/ Ca^{2+})
Analysis of the 5th group ppt:			
1	To the ppt add about 1ml of dil. acetic acid and gently heat it.	The ppt dissolves.	Presence of (Ba^{2+}/ Ca^{2+})

2	**Test for Barium.** To the solution add about 1ml of potassium chromate	A yellow ppt is obtained. Filter To the residue add a drop of Conc. HCl. Take a portion of the paste and introduce near the Bunsen flame. A transient green is imparted to the flame	Presence of Barium is Confirmed

Result:
The Anion Present : CHLORIDE
The cation Present : BARIUM
The Given simple salt : BARIUM CHLORIDE

SYSTEMATIC ANALYSIS OF SIMPLE SALT- XI

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts
2.	**Action of heat:** A small amount of a salt is heated in a test tube	No Characteristic Change Occurs	Absence of Zinc, Ammonium, Nitrate
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic flame Colour is Observed.	Absence of Copper, Barium, Calcium
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	No Charactristic gas evolves	Absence of Carbonate,Nitrate, Sulphide
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	No Charactristic gas evolves	Absence of Chloride, Bromide, Nitrate
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	No Characteristic Gas is evolved.	Absence of chloride, bromide
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt

9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	No Characteristic ppt is Obtained.	Absence of chloride, bromide, sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	A white ppt insoluble in dil H_2SO_4 is formed	Prsence of sulphate is Confirmed.
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	A whit ppt soluble in excess of ammonium acetate is formed	Presence of sulphate
13	**Brown ring test:** 1ml of the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.			
1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium

2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1mL of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl and NH_4OH and shake it well	No ppt is obtained	Absence of 3rd group metal ions (Al^{3+} / Fe^{3+})
5	**GROUP IV** To the above solution pass (H_2S) gas	No dirty white ppt is obtained	Absence of 4 th group metal ion (Zn^{2+})
6	**GROUP V** To the salt solution add 1ml each of NH_4Cl, NH_4OH and $(NH_4)_2CO_3$ and shake it well.	No white ppt is obtained	Absence of 5th group metal ions (Ba^{2+}/ Ca^{2+})
7	**GROUP VI** To the original salt solution add 1ml each of NH_4Cl, NH_4OH and $NH_4H_2PO_4$, and scratch the sides of the test tube.	A white ppt is obtained.	Presence of 6th group metal ion (Mg^{2+})
Analysis of the 6th group ppt:			
2	**Test for Magnesium**: i)To about 1ml of the original salt solution add dil. NaOH in drops with shaking.	White Ppt insoluble in excess NaOH is Obtained	Presence of Magnesium is Confirmed
3	ii)To about 1ml of the original salt solution add about 1ml of Magneson reagent.	A blue ppt is formed.	Presence of Magnesium is Confirmed

Result:
The Anion Present : SULPHATE
The cation Present : MAGNESIUM
The Given simple salt : MAGNESIUM SULPHATE

SYSTEMATIC ANALYSIS OF SIMPLE SALT- XII

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts
2.	**Action of heat:** A small amount of a salt is heated in a test tube	No Characteristic Change Occurs	Absence of Zinc, Ammonium, Nitrate

3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic flame Colour is Observed.	Absence of Copper, Barium, Calcium
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	No Charactristic gas evolves	Absence of Carbonate,Nitrate, Sulphide
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	No Charactristic gas evolves	Absence of Chloride, Bromide, Nitrate
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	No Characteristic Gas is evolved.	Absence of chloride, bromide
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	No Characteristic ppt is Obtained.	Absence of chloride, bromide, sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	No white ppt is obtained	Absence of sulphate

12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	No white ppt is obtained	Absence of sulphate
13	**Brown ring test:** 1ml of the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	Canary yellow ppt is formed.	Presence of Phosphate is Confirmed
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.			
1	**GROUP 0** 1ml of the original salt solution add about 1mL each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl and NH_4OH and shake it well	No ppt is obtained	Absence of 3rd group metal ions (Al^{3+} / Fe^{3+})
5	**GROUP IV** To the above solution pass (H_2S) gas	No dirty white ppt is obtained	Absence of 4 th group metal ion (Zn^{2+})
6	**GROUP V** To the salt solution add 1ml each of NH_4Cl, NH_4OH and $(NH_4)_2CO_3$ and shake it well.	No white ppt is obtained	Absence of 5th group metal ions (Ba^{2+}/ Ca^{2+})

7	**GROUP VI** To the original salt solution add 1ml each of NH_4Cl, NH_4OH and $NH_4H_2PO_4$, and scratch the sides of the test tube.	A white ppt is obtained.	Presence of 6th group metal ion Mg^{2+}
Analysis of the 6th group ppt:			
2	**Test for Magnesium**: i)To about 1ml of the original salt solution add dil. NaOH in drops with shaking.	White Ppt insoluble in excess NaOH is Obtained	Presence of Magnesium is Confirmed
3	ii)To about 1ml of the original salt solution add about 1ml of Magneson reagent.	A blue ppt is formed.	Presence of Magnesium is Confirmed
Result: The Anion Present : PHOSPHATE The cation Present : MAGNESIUM The Given simple salt : MAGNESIUM PHOSPHATE			

SYSTEMATIC ANALYSIS OF SIMPLE SALT- XIII

S NO	Experiment	Observation	Inference
Analysis of anions			
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts
2.	**Action of heat:** A small amount of a salt is heated in a test tube	A colourless, odourless gas turning lime water milky evolves	Presence of carbonate
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic flame Colour is Observed.	Absence of Copper, Barium, Calcium
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	A colourless, odourless gas evolves as a brisk Effervescence and turns lime water milky	Presence of carbonate is Confirmed
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	No Charactristic gas evolves	Absence of Chloride, Bromide, Nitrate
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	No Characteristic Gas is evolved.	Absence of chloride, bromide

7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	No Characteristic gas is Observed.	Absence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	No Characteristic ppt is Obtained.	Absence of chloride, bromide, sulphide
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	No white ppt is obtained	Absence of sulphate
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	No white ppt is obtained	Absence of sulphate
13	**Brown ring test:** 1ml of the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of Nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of Phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.

Preparation of salt solution:
To a small amount of salt in a test tube add 2 to 3ml of dil.HCl, shake it and gently heat it. This solution is called “original solution”.

1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler’s reagent and NaOH.	No chocolate brown ppt is obtained.	Absence of ammonium
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl and NH_4OH and shake it well	No ppt is obtained	Absence of 3rd group metal ions (Al^{3+} / Fe^{3+})
5	**GROUP IV** To the above solution pass (H_2S) gas	No dirty white ppt is obtained	Absence of 4 th group metal ion (Zn^{2+})
6	**GROUP V** To the salt solution add 1ml each of NH_4Cl, NH_4OH and $(NH_4)_2CO_3$ and shake it well.	No white ppt is obtained	Absence of 5th group metal ions (Ba^{2+}/ Ca^{2+})
7	**GROUP VI** To the original salt solution add 1ml each of NH_4Cl, NH_4OH and $NH_4H_2PO_4$, and scratch the sides of the test tube.	A white ppt is obtained.	Presence of 6th group metal ion Mg^{2+}
Analysis of the 6th group ppt:			
2	**Test for Magnesium**: i)To about 1ml of the original salt solution add dil. NaOH in drops with shaking.	White Ppt insoluble in excess NaOH is Obtained	Presence of Magnesium is Confirmed
3	ii)To about 1ml of the original salt solution add about 1ml of Magneson reagent.	A blue ppt is formed.	Presence of Magnesium is Confirmed

Result:
The Anion Present : CARBONATE
The cation Present : MAGNESIUM
The Given simple salt : MAGNESIUM CARBONATE

SYSTEMATIC ANALYSIS OF SIMPLE SALT- XIV

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts
2.	**Action of heat:** A small amount of a salt is heated in a test tube	A colourless gas with the pungent small turning red litmus paper into blue evolves. It gives a dense white fumes when a glass rod dipped in Conc. HCl is brought close to its mouth	Presence of an ammonium salt
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic flame Colour is Observed.	Absence of Copper, Barium, Calcium
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	No Charactristic gas evolves	Absence of Carbonate,Nitrate, Sulphide
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	A colourless gas evolves. It gives a dense white fumes when a glass rod dipped in liquid ammonia is brought close to its mouth	Prsence of Chloride
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	A greenish yellow gas turning starch iodide paper blue evolves	Prsence of Chloride
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	A colourless gas with the pun gent smell giving dense white fumes with a glass rod dipped in dil. HCl evolves	Presence of ammonium salt

9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H2SO4.Gently heat it. Pass the vapours into dilute sodium hydroxide solution. If a yellow solution is obtained, add dil. Acetic acid and lead acetate	A yellow ppt is obtained	Presence of chloride.
Analysis with Sodium carbonate extract **Preparation of Sodium carbonate extract** Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.			
10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	A curdy white ppt insoluble in dil. Ammonia is formed	Presence of chloride
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	No white ppt is obtained	Absence of sulphate
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	No white ppt is obtained	Absence of sulphate
13	**Brown ring test:** 1ml of the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of phosphate
15	**Test with sodium nitrobruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.			

1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler's reagent and NaOH.	A chocolate brown ppt is obtained.	Presence of 0 group metal ion (NH_4^+)
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})
4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl, NH_4OH and shake it well	No ppt is obtained	Absence of 3rd group metal ions (Al^{3+} / Fe^{3+})
5	**GROUP IV** To the above solution pass (H_2S) gas	No dirty white ppt is obtained	Absence of 4 th group metal ion (Zn^{2+})
6	**GROUP V** To the salt solution add 1ml each of NH_4Cl, NH_4OH and $(NH_4)_2CO_3$ and shake it well.	No white ppt is obtained	Absence of 5th group metal ions (Ba^{2+}/ Ca^{2+})
7	**GROUP VI** To the original salt solution add 1ml each of NH_4Cl, NH_4OH and $NH_4H_2PO_4$, and scratch the sides of the test tube.	No white ppt is obtained.	Absence of 6th group metal ion (Mg^{2+})
Analysis of the Ammonium			
1	To 1ml of the original salt solution add about 1ml each of Nessler's reagent and NaOH.	A chocolate brown ppt is obtained.	Presence of Ammonium is Confirmed

Result:
The Anion Present : CHLORIDE
The cation Present : AMMONIUM
The Given simple salt : AMMONIUM CHLORIDE

SYSTEMATIC ANALYSIS OF SIMPLE SALT- XV

S NO	Experiment	Observation	Inference
	Analysis of anions		
1	**Colour:** Note the colour of the salt	Colourless	Absence of copper, Iron salts

2.	**Action of heat:** A small amount of a salt is heated in a test tube	A colourless gas with the pungent small turning red litmus paper into blue evolves. It gives a dense white fumes when a glass rod dipped in Conc. HCl is brought close to its mouth	Presence of an ammonium salt
3.	**Flame test:** Small amount of salt + A drop of Conc. HCl ,form a paste. Take the paste at the charred end of the splinter and introduce it near the Bunsen flame	No Characteristic flame Colour is Observed.	Absence of Copper, Barium, Calcium
4.	**Action of dil. HCl:** Small amount of salt + 1ml of dil. HCl . Gently heat it	No Charactristic gas evolves	Absence of Carbonate,Nitrate, Sulphide
5	**Action of Conc.H_2SO_4:** Small amount of a salt in a dry test tube + Conc. H_2SO_4 and gently heat it	A reddish brown gas turning moist fluorescein paper green evolves	Prsence of Bromide
6	**Action of MnO_2 and Conc. H_2SO_4:** Small amount of salt in a dry test tube + pinch of MnO_2 + Conc.H_2SO_4 and gently heat it	A reddish brown gas turning moist fluorescein paper red evolves	Prsence of Bromide
7.	**Action of Conc. H_2SO_4 and copper turning:** small amount of salt in a dry test tube + few copper turnings + Conc. H_2SO_4. Gently heat it	No reddish brown gas evolves	Absence of nitrate.
8.	**Action of dil. NaOH solution:** Small amont of a salt + dil.NaOH solution and gently heat it.	A colourless gas with the pungent smell giving dense white fumes with a glass rod dipped in dil. HCl evolves	Presence of ammonium salt
9	**Chromyl chloride test:** Small amount of salt in + a pinch of potassium dichromate and three drops Conc. H_2SO_4.Gently heat it.	No Red Orange Vapour is Observed.	Absence of chloride.

Analysis with Sodium carbonate extract

Preparation of Sodium carbonate extract

Take 1g of the given salt + 3g of solid sodium carbonate + 20g of distilled water. Boil the solution for few mins, filter.The filtrate is called sodium carbonate extract.

10.	**Test for halides:** 1 ml of sodium carbonate extract +dil. HNO_3 + 1ml of $AgNO_3$, and shake it	A pale yellow ppt sparingly soluble in ammonia is formed	Presence of Bromide is Confirmed
11	**Test with barium chloride:** One ml of the sodium carbonate extract + dil. Aceticacid + 1ml of bariumchloride solution and shake	No white ppt is obtained	Absence of sulphate
12	**Test with leadacetate:** 1ml of the sodium carbonate extract, + 1ml of dil acetic acid and heat it + 1 ml of Lead Acetate	No white ppt is obtained	Absence of sulphate
13	**Brown ring test:** 1ml of the sodium carbonate extract + dil.H_2SO_4 + freshly prepared ferrous sulphate solution then add Conc. H_2SO_4 along the sides of the test tube.	No brown ring is formed	Absence of nitrate
14	**Ammonium molybdate test:** 1 ml of the extract + dil HNO_3 + about 1ml each of ammonium molybdate and Conc. HNO_3	No canary yellow ppt is formed.	Absence of phosphate
15	**Test with sodium nitro bruside:** 1ml of the sodium carbonate extract + 1ml of dil .aommonia. + few drops of sodium nitro bruside.	No purple or violet colouration appears	Absence of sulphide.
Preparation of salt solution: To a small amount of salt in a test tube add 2 to 3ml of water, shake it and gently heat it. This solution is called “original solution”.			
1	**GROUP 0** 1ml of the original salt solution add about 1ml each of Nessler’s reagent and NaOH.	A chocolate brown ppt is obtained.	Presence of 0 group metal ion (NH_4^+)
2	**GROUP I** Take about 1 ml of the salt solution in a test tube Add about 1ml of dil HCl, and shake it	No White ppt is formed.	Absence of 1st group metal ions (Pb^{2+})
3	**GROUP II** To the above solution pass H_2S gas.	No Black ppt is formed	Absence of 2nd group metal ions (Cu^{2+})

4	**GROUP III** To about 1ml of the salt solution add about 1ml each of NH_4Cl, NH_4OH and shake it well	No ppt is obtained	Absence of 3rd group metal ions (Al^{3+} / Fe^{3+})
5	**GROUP IV** To the above solution pass (H_2S) gas	No dirty white ppt is obtained	Absence of 4 th group metal ion (Zn^{2+})
6	**GROUP V** To the salt solution add 1ml each of NH_4Cl, NH_4OH and $(NH_4)_2CO_3$ and shake it well.	No white ppt is obtained	Absence of 5th group metal ions (Ba^{2+}, Ca^{2+})
7	**GROUP VI** To the original salt solution add 1ml each of NH_4Cl, NH_4OH and $NH_4H_2PO_4$, and scratch the sides of the test tube.	No white ppt is obtained.	Absence of 6th group metal ion (Mg^{2+})
Analysis of the Ammonium			
1	To 1ml of the original salt solution add about 1ml each of Nessler's reagent and NaOH.	A chocolate brown ppt is obtained.	Presence of Ammonium is Confirmed

Result:

The Anion Present : BROMIDE

The cation Present : AMMONIUM

The Given simple salt : AMMONIUM BROMIDE