12th Standard – Chemistry Practical

Simple salt analysis –I

DATE **PRELIMINARY TESTS**

S. No.	EXPERIMENT	OBSERVATION	INFERENCE
1	**a)Colour** Colour of the salt is noted	Colourless	Absence of copper and iron salt
	b)Appearance Appearance of the salt is noted	crystaline	May be Sulphate, Nitrate, Chloride
2	**Solubility** A little of the salt is shaken with **water.**	Soluble	May be Sulphate, Nitrate, Chloride orAmmonium Carbonate.
3	**Action Of Heat**: A small amount of the salt is **heated** gently in a dry test tube.	**Decripitation** occurs with evolution of **reddish brown gas.**	May be **Nitrate.**
4	**Flame Test**: A small amount of the salt is made into a paste with**conc. HCl** in a watch glass and introduced into the non-luminous part of the Bunsen flame.	No characteristic coloured flame	Absence of Calcium and Barium.
5	**Ash Test:** A filter paper is soaked into a paste of the salt with**conc. HCl / HNO_3** And **Cobalt Nitrate** solution in a watch glass and burnt.	No characteristic coloured ash.	Absence of Zinc, Aluminium and Magnesium.
	IDENTIFICATION OF ACID RADICALS		
6	**Action Of Dil Hcl** To a small amount of **dilute HCl** the salt is added.	No characteristic change.	Absence of Sulphide and Carbonate.
7	**Copper Turnings Test:** A small amount of the salt is heated with **Copper Turnings / Filter paper ball**and a few drops of **conc. Sulphuric acid.**	**Reddish brown gas** is evolved.	Presence of**Nitrate.**
8	**Action Of NaOH**: A small amount of the salt is heated with **Sodium Hydroxide.**	No pungent smelling gas.	Absence of Ammonium.
9	**Chromyl Chloride Test:** To a small amount of the salt a pinch of **Potassium Dichromate** is added and heated with few drops of**conc. Sulphuric acid.**	No Red orange vapours.	Absence of chloride.
PREPARATION OF SODIUM CARBONATE EXTRACT: A small amount of salt is mixed with twice the amount of sodium carbonate and 20ml of distilled water is added, boiled for 10 minutes, cooled and filtered. The filtrate is called **"SODIUM CARBONATE EXTRACT".**			
1	**Barium Chloride Test:** To a few drops of the extract,**dilute Hydrochloric Acid** is added until the effervescence ceases and 2 ml of **Barium chloride** solution is added.	No white precipitate	Absence of Sulphate
2	**Silver Nitrate Test:** To a few drops of the extract **dilute Nitric Acid** is added until the effervescence ceases and 2 ml of **Silver Nitrate**solution is added.	No precipitate.	Absence of chloride/ sulphide
3	**Lead Acetate Test** To a few drops of the extract dilute acetic acid is added until the effervesences ceases and 2 ml of **Lead acetate** solution is added	No precipitate.	Absence of sulphate and sulphide
4	**Brown Ring Test:** To a few drops of extract **dilute Sulphuric acid** is added until the effervescence ceases, then **freshly prepared $FeSO_4$** is addedand then **conctrated Sulphuric acid** is added drop by drop along the sides of the test tube.	**Brown ring** is formed at the junction of the two layers.	**Nitrate** is confirmed.
IDENTIFICATION OF THE BASIC RADICALS **PREPARATION OF ORIGINAL SOLUTION:** **The orginal solution prepared by dissolving a small amound of salt in water**			
	ZERO GROUP		
1	To a few drops of the original solution **Sodium**	**No Reddish brown**precipitate	**Absence of Ammonium**

	Hydroxide and **Nessler's reagent** are added.		
	GROUP SEPARATION		
2	To a few drops of the original solution 2 ml of**dilute HCl** is added	**white** precipitate soluble when boiled with water is obtained	Presence of **First Group. (Lead).**
	CONFIRMATORY TESTS FOR BASIC RADICALS		
1	To a few drops of the original solution **Potassium Iodide** is added.	**Yellow precipitatesoluble in hot water** which reappears as golden yellow spangles on cooling.	**Lead** is confirmed.

RESULT

The given simple salt contains

1. Basic Radical **: Lead**

2. Acid Radical **: Nitrate**

The given simple salt is **: Lead Nitrate**

Simple salt analysis –II

DATE **PRELIMINARY TESTS**

S. No.	EXPERIMENT	OBSERVATION	INFERENCE
1	**a)Colour** Colour of the salt is noted	Colourless	Absence of copper and iron salt
	b)Appearance Appearance of the salt is noted	crystaline	May be Sulphate, Nitrate, Chloride
2	**Solubility** A little of the salt is shaken with **water.**	Soluble	May be Sulphate, Nitrate, Chloride or Ammonium Carbonate.
3	**Action Of Heat**: A small amount of the salt is **heated** gently in a dry test tube.	**Salt sublimes** with evolution of **pungent smelling gas** giving **dense white fumes with** a glass rod dipped in **conc HCl.**	May be **Ammonium**
4	**Flame Test**: A small amount of the salt is made into a paste with **conc. HCl** in a watch glass and introduced into the non-luminous part of the Bunsen flame.	No characteristic coloured flame	Absence of Calcium and Barium.
5	**Ash Test:** A filter paper is soaked into a paste of the salt with **conc. HCl / HNO_3** And **Cobalt Nitrate** solution in a watch glass and burnt.	No characteristic coloured ash.	Absence of Zinc, Aluminium and Magnesium.
	IDENTIFICATION OF ACID RADICALS		
6	**Action Of Dil Hcl** To a small amount of **dilute HCl** the salt is added.	No characteristic change.	Absence of Sulphide and Carbonate.
7	**Copper Turnings Test:** A small amount of the salt is heated with **Copper Turnings** and a few drops of **conc. Sulphuric acid.**	No reddish brown gas is evolved.	Absence of Nitrate.
8	**Action Of NaOH**: A small amount of the salt is heated with **Sodium Hydroxide.**	**Pungent smelling gas**forming **dense whitefumes with** a glass rod dipped in **conc. HCl** and also turns red Litmus paper blue.	Presence of **Ammonium**
9	**Chromyl Chloride Test:** To a small amount of the salt a pinch of **Potassium Dichromate** is added and heated with few drops of **conc. Sulphuric acid.**	No Red orange vapours.	Absence of chloride.
PREPARATION OF SODIUM CARBONATE EXTRACT: A small amount of salt is mixed with twice the amount of sodium carbonate and 20ml of distilled water is added, boiled for 10 minutes, cooled and filtered. The filtrate is called **"SODIUM CARBONATE EXTRACT".**			
1	**Barium Chloride Test:** To a few drops of the extract, **dilute Hydrochloric Acid** is added until the effervescence ceases and 2 ml of **Barium**	A **white precipitate, insoluble** in conc. HCl.	**Sulphate** is confirmed.

	chloride solution is added.		
2	**Silver Nitrate Test:** To a few drops of the extract **dilute Nitric Acid** is added until the effervescence ceases and 2 ml of **Silver Nitrate** solution is added.	No precipitate.	Absence of chloride/ sulphide
3	**Lead Acetate Test** To a few drops of the extract dilute acetic acid is added until the effervescence ceases and 2 ml of **Lead acetate** solution is added	White precipitate soluble in ammonium acetate and sodium hydroxide is obtained	Presence of sulphate
4	**Brown Ring Test:** To a few drops of extract **dilute Sulphuric acid** is added until the effervescence ceases, then **freshly prepared $FeSO_4$** is added and then **conctrated Sulphuric acid** is added drop by drop along the sides of the test tube.	No brown ring.	Absence of Nitrate.
IDENTIFICATION OF THE BASIC RADICALS **PREPARATION OF ORIGINAL SOLUTION:** **The orginal solution prepared by dissolving a small amound of salt in water**			
ZERO GROUP			
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**Reddish brown**precipitate.	**Ammonium** is confirmed.
GROUP SEPARATION			
2	To a few drops of the original solution 2 ml of **dilute HCl** is added	No characteristic precipitate.	Absence of First Group (Lead).
3	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added.	No characteristic precipitate.	Absence of Third Group (Aluminium).
4	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added and**H_2S** gas is passed.	No characteristic precipitate.	Absence of Fourth Group (Zinc).
5	To a few drops of the original solution 1 ml **NH_4Cl**, 2 ml **NH_4OH** and 2 ml **$(NH_4)_2CO_3$** solutions are added.	No characteristic precipitate	Absence of Fifth Group (Calcium **and**Barium).
6	To a few drops of the original solution 1 ml **NH_4Cl**, 2 ml **NH_4OH** and 2 ml **Di Sodium Hydrogen Phosphate** are added.	No characteristic precipitate.	Absence of Sixth Group (Magnesium).
CONFIRMATORY TESTS FOR BASIC RADICALS			
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**Reddish brown** precipitate.	**Ammonium** is confirmed.

RESULT

The given simple salt contains

1. Basic Radical **: Ammonium**

2. Acid Radical **: Sulphate**

The given simple salt is **: Ammonium Sulphate**

Simple salt analysis –III

DATE **PRELIMINARY TESTS**

S. No.	EXPERIMENT	OBSERVATION	INFERENCE
1	**a)Colour** Colour of the salt is noted	Colourless	Absence of copper and iron salt
	b)Appearance Appearance of the salt is noted	powdery	May be carbonate and sulphide
2	**Solubility** A little of the salt is shaken with **water.**	insoluble	May be carbonate and sulphide
3	**Action Of Heat**: A small amount of the salt is **heated** gently in a dry test tube.	Colourless, odourless**gas turning Lime water milky.**	May be **Carbonate.**
4	**Flame Test**: A small amount of the salt is made into a paste with **conc. HCl** in a watch glass and	Brick red flame	Presence of **Calcium**

	introduced into the non-luminous part of the Bunsen flame.		
5	**Ash Test:** A filter paper is soaked into a paste of the salt with **conc. HCl / HNO_3** And **Cobalt Nitrate** solution in a watch glass and burnt.	No characteristic coloured ash.	Absence of Zinc, Aluminium and Magnesium.
	IDENTIFICATION OF ACID RADICALS		
6	**Action Of Dil Hcl** To a small amount of **dilute HCl** the salt is added.	**Brisk effervescence** of colourless, odourless **gas turning Lime water milky.**	**Carbonate** is confirmed.
7	**Copper Turnings Test:** A small amount of the salt is heated with **Copper Turnings** and a few drops of **conc. Sulphuric acid.**	No reddish brown gas is evolved.	Absence of Nitrate.
8	**Action Of NaOH**: A small amount of the salt is heated with **Sodium Hydroxide.**	No pungent smelling gas.	Absence of Ammonium.
9	**Chromyl Chloride Test:** To a small amount of the salt a pinch of **Potassium Dichromate** is added and heated with few drops of **conc. Sulphuric acid.**	No Red orange vapours.	Absence of chloride.
PREPARATION OF SODIUM CARBONATE EXTRACT: A small amount of salt is mixed with twice the amount of sodium carbonate and 20ml of distilled water is added, boiled for 10 minutes, cooled and filtered. The filtrate is called **"SODIUM CARBONATE EXTRACT".**			
1	**Barium Chloride Test:** To a few drops of the extract, **dilute Hydrochloric Acid** is added until the effervescence ceases and 2 ml of **Barium chloride** solution is added.	No white precipitate	Absence of Sulphate
2	**Silver Nitrate Test:** To a few drops of the extract **dilute Nitric Acid** is added until the effervescence ceases and 2 ml of **Silver Nitrate** solution is added.	No precipitate.	Absence of chloride and sulphide
3	**Lead Acetate Test** To a few drops of the extract dilute acetic acid is added until the effervescence ceases and 2 ml of **Lead acetate** solution is added	No precipitate	Absence of Sulphate
4	**Brown Ring Test:** To a few drops of extract **dilute Sulphuric acid** is added until the effervescence ceases, then **freshly prepared $FeSO_4$** is added and then **conctrated Sulphuric acid** is added drop by drop along the sides of the test tube.	No brown ring.	Absence of Nitrate.
IDENTIFICATION OF THE BASIC RADICALS **PREPARATION OF ORIGINAL SOLUTION:** **The orginal solution prepared by dissolving a small amound of salt in dil HNO_3**			
	ZERO GROUP		
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**No Reddish brown**precipitate	Absence of Ammonium
	GROUP SEPARATION		
2	To a few drops of the original solution 2 ml of **dilute HCl** is added	No characteristic precipitate.	Absence of First Group (Lead).
3	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added.	No characteristic precipitate.	Absence of Third Group (Aluminium).
4	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added and**H_2S** gas is passed.	No characteristic precipitate.	Absence of Fourth Group (Zinc).
5	To a few drops of the original solution 1 ml **NH_4Cl**, 2 ml **NH_4OH** and 2 ml **$(NH_4)_2CO_3$** solutions are added.	**White** precipitate	Presence of Fifth Group **(Calcium orBarium).**
	CONFIRMATORY TESTS FOR BASIC RADICALS		
1	To a few drops of the original solution **Ammonium Hydroxide** and **Ammonium Oxalate** are added**.**	**White precipitate insoluble** in Acetic acid.	**Calcium** is confirmed**.**

RESULT

The given simple salt contains

1. Basic Radical **: Calcium**

2. Acid Radical **:** Carbonate

The given simple salt is **: Calcium Carbonate**

Simple salt analysis –IV

DATE **PRELIMINARY TESTS**

S. No.	EXPERIMENT	OBSERVATION	INFERENCE
1	**a)Colour** Colour of the salt is noted	Colourless	Absence of copper and iron salt
	b)Appearance Appearance of the salt is noted	crystaline	May be Sulphate, Nitrate, Chloride
2	**Solubility** A little of the salt is shaken with **water.**	Soluble	May be Sulphate, Nitrate, Chloride orAmmonium Carbonate.
3	**Action Of Heat**: A small amount of the salt is**heated** gently in a dry test tube.	**Decripitation** occurs with evolution of **reddish brown gas.**	May be **Nitrate.**
4	**Flame Test**: A small amount of the salt is made into a paste with**conc. HCl** in a watch glass and introduced into the non-luminous part of the Bunsen flame.	No characteristic coloured flame	Absence of Calcium and Barium.
5	**Ash Test:** A filter paper is soaked into a paste of the salt with**conc. HCl / HNO_3** And **Cobalt Nitrate** solution in a watch glass and burnt.	**Blue** ash.	Presence of**Aluminium.**
	IDENTIFICATION OF ACID RADICALS		
6	**Action Of Dil Hcl** To a small amount of **dilute HCl** the salt is added.	No characteristic change.	Absence of Sulphide and Carbonate.
7	**Copper Turnings Test:** A small amount of the salt is heated with **Copper Turnings / Filter paper ball**and a few drops of **conc. Sulphuric acid.**	**Reddish brown gas** is evolved.	Presence of**Nitrate.**
8	**Action Of NaOH**: A small amount of the salt is heated with **Sodium Hydroxide.**	No pungent smelling gas.	Absence of Ammonium.
9	**Chromyl Chloride Test:** To a small amount of the salt a pinch of **Potassium Dichromate** is added and heated with few drops of**conc. Sulphuric acid.**	No Red orange vapours.	Absence of chloride.
PREPARATION OF SODIUM CARBONATE EXTRACT: A small amount of salt is mixed with twice the amount of sodium carbonate and 20ml of distilled water is added, boiled for 10 minutes, cooled and filtered. The filtrate is called **"SODIUM CARBONATE EXTRACT".**			
1	**Barium Chloride Test:** To a few drops of the extract,**dilute Hydrochloric Acid** is added until the effervescence ceases and 2 ml of **Barium chloride** solution is added.	No white precipitate	Absence of Sulphate
2	**Silver Nitrate Test:** To a few drops of the extract **dilute Nitric Acid** is added until the effervescence ceases and 2 ml of **Silver Nitrate**solution is added.	No precipitate.	Absence of chloride/ sulphide
3	**Lead Acetate Test** To a few drops of the extract dilute acetic acid is added until the effervesences ceases and 2 ml of **Lead acetate** solution is added	No precipitate.	Absence of sulphate and sulphide
4	**Brown Ring Test:** To a few drops of extract **dilute Sulphuric acid** is added until the effervescence ceases, then **freshly prepared $FeSO_4$** is addedand then **conctrated Sulphuric acid** is added drop by drop along the sides of the test tube.	**Brown ring** is formed at the junction of the two layers.	**Nitrate** is confirmed.

IDENTIFICATION OF THE BASIC RADICALS **PREPARATION OF ORIGINAL SOLUTION:** **The orginal solution prepared by dissolving a small amound of salt in water**			
ZERO GROUP			
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**No Reddish brown**precipitate	**Absence of Ammonium**
GROUP SEPARATION			
2	To a few drops of the original solution 2 ml of **dilute HCl** is added	No characteristic precipitate.	Absence of First Group (Lead).
3	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added.	**Gelatinous white**precipitate.	Presence of **Third Group** (**Aluminium).**
CONFIRMATORY TESTS FOR BASIC RADICALS			
1	To a few drops of the original solution **Ammonium Hydroxide** and **Aluminon reagent** are added.	A **bright red lake.**	**Aluminium** is confirmed.

RESULT

The given simple salt contains

1. Basic Radical **: Aluminium**

2. Acid Radical **: Nitrate**

The given simple salt is **: Aluminium Nitrate**

Simple salt analysis –V

DATE **PRELIMINARY TESTS**

S. No.	EXPERIMENT	OBSERVATION	INFERENCE
1	**a)Colour** Colour of the salt is noted	Colourless	Absence of copper and iron salt
	b)Appearance Appearance of the salt is noted	crystaline	May be Sulphate, Nitrate, Chloride
2	**Solubility** A little of the salt is shaken with **water.**	Soluble	May be Sulphate, Nitrate, Chloride or Ammonium Carbonate.
3	**Action Of Heat**: A small amount of the salt is **heated** gently in a dry test tube.	**Salt sublimes** with evolution of **pungent smelling gas** giving **dense white fumes with** a glass rod dipped in **conc HCl.**	May be **Ammonium**
4	**Flame Test**: A small amount of the salt is made into a paste with **conc. HCl** in a watch glass and introduced into the non-luminous part of the Bunsen flame.	No characteristic coloured flame	Absence of Calcium and Barium.
5	**Ash Test:** A filter paper is soaked into a paste of the salt with **conc. HCl / HNO_3** And **Cobalt Nitrate** solution in a watch glass and burnt.	No characteristic coloured ash.	Absence of Zinc, Aluminium and Magnesium.
IDENTIFICATION OF ACID RADICALS			
6	**Action Of Dil Hcl** To a small amount of **dilute HCl** the salt is added.	No characteristic change.	Absence of Sulphide and Carbonate.
7	**Copper Turnings Test:** A small amount of the salt is heated with **Copper Turnings** and a few drops of **conc. Sulphuric acid.**	No reddish brown gas is evolved.	Absence of Nitrate.
8	**Action Of NaOH**: A small amount of the salt is heated with **Sodium Hydroxide.**	**Pungent smelling gas**forming **dense whitefumes with** a glass rod dipped in **conc. HCl** and also turns red Litmus paper blue.	Presence of**Ammonium**
9	**Chromyl Chloride Test:**	**Red orange vapours**evolved are	**Chloride** is confirmed.

	To a small amount of the salt a pinch of **Potassium Dichromate** is added and heated with few drops of **conc. Sulphuric acid.**	passed through water to get a yellow solution, which on adding **Lead acetate**forms a **yellowprecipitate**	
PREPARATION OF SODIUM CARBONATE EXTRACT: A small amount of salt is mixed with twice the amount of sodium carbonate and 20ml of distilled water is added, boiled for 10 minutes, cooled and filtered. The filtrate is called **"SODIUM CARBONATE EXTRACT".**			
1	**Barium Chloride Test:** To a few drops of the extract, **dilute Hydrochloric Acid** is added until the effervescence ceases and 2 ml of **Barium chloride** solution is added.	No white precipitate.	Absence of Sulphate
2	**Silver Nitrate Test:** To a few drops of the extract **dilute Nitric Acid** is added until the effervescence ceases and 2 ml of **Silver Nitrate** solution is added.	A **curdy white precipitate, soluble** in excess of Ammonium hydroxide.	Presence of **Chloride.**
3	**Lead Acetate Test** To a few drops of the extract dilute acetic acid is added until the effervescence ceases and 2 ml of **Lead acetate** solution is added	No precipitate	Absence of sulphate
4	**Brown Ring Test:** To a few drops of extract **dilute Sulphuric acid** is added until the effervescence ceases, then **freshly prepared $FeSO_4$** is added and then **conctrated Sulphuric acid** is added drop by drop along the sides of the test tube.	No brown ring.	Absence of Nitrate.
IDENTIFICATION OF THE BASIC RADICALS **PREPARATION OF ORIGINAL SOLUTION:** **The orginal solution prepared by dissolving a small amound of salt in water**			
ZERO GROUP			
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**Reddish brown**precipitate.	**Ammonium** is confirmed.
GROUP SEPARATION			
2	To a few drops of the original solution 2 ml of **dilute HCl** is added	No characteristic precipitate.	Absence of First Group (Lead).
3	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added.	No characteristic precipitate.	Absence of Third Group (Aluminium).
4	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added and**H_2S** gas is passed.	No characteristic precipitate.	Absence of Fourth Group (Zinc).
5	To a few drops of the original solution 1 ml **NH_4Cl**, 2 ml **NH_4OH** and 2 ml **$(NH_4)_2CO_3$** solutions are added.	No characteristic precipitate	Absence of Fifth Group (Calcium **and**Barium).
6	To a few drops of the original solution 1 ml **NH_4Cl**, 2 ml **NH_4OH** and 2 ml **Di Sodium Hydrogen Phosphate** are added.	No characteristic precipitate.	Absence of Sixth Group (Magnesium).
CONFIRMATORY TESTS FOR BASIC RADICALS			
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**Reddish brown** precipitate.	**Ammonium** is confirmed.

RESULT

The given simple salt contains

1. Basic Radical **: Ammonium**

2. Acid Radical **: Chloride**

The given simple salt is **: Ammonium Chloride**

Simple salt analysis –VI

DATE **PRELIMINARY TESTS**

S. No.	EXPERIMENT	OBSERVATION	INFERENCE
1	**a)Colour** Colour of the salt is noted	Colourless	Absence of copper and iron salt

	b)Appearance Appearance of the salt is noted	crystaline	May be Sulphate, Nitrate, Chloride
2	**Solubility** A little of the salt is shaken with **water.**	Soluble	May be Sulphate, Nitrate, Chloride or Ammonium Carbonate.
3	**Action Of Heat**: A small amount of the salt is **heated** gently in a dry test tube.	**Salt sublimes** with evolution of **pungent smelling gas** giving **dense white fumes with** a glass rod dipped in **conc HCl.**	May be **Ammonium**
4	**Flame Test**: A small amount of the salt is made into a paste with **conc. HCl** in a watch glass and introduced into the non-luminous part of the Bunsen flame.	No characteristic coloured flame	Absence of Calcium and Barium.
5	**Ash Test:** A filter paper is soaked into a paste of the salt with **conc. HCl / HNO_3** And **Cobalt Nitrate** solution in a watch glass and burnt.	No characteristic coloured ash.	Absence of Zinc, Aluminium and Magnesium.
	IDENTIFICATION OF ACID RADICALS		
6	**Action Of Dil Hcl** To a small amount of **dilute HCl** the salt is added.	**Brisk effervescence** of colourless, odourless **gas turning Lime water milky.**	**Carbonate** is confirmed.
7	**Copper Turnings Test:** A small amount of the salt is heated with **Copper Turnings** and a few drops of **conc. Sulphuric acid.**	No reddish brown gas is evolved.	Absence of Nitrate.
8	**Action Of NaOH**: A small amount of the salt is heated with **Sodium Hydroxide.**	**Pungent smelling gas**forming **dense whitefumes with** a glass rod dipped in **conc. HCl** and also turns red Litmus paper blue.	Presence of**Ammonium**
9	**Chromyl Chloride Test:** To a small amount of the salt a pinch of **Potassium Dichromate** is added and heated with few drops of **conc. Sulphuric acid.**	No Red orange vapours.	Absence of chloride.
PREPARATION OF SODIUM CARBONATE EXTRACT: A small amount of salt is mixed with twice the amount of sodium carbonate and 20ml of distilled water is added, boiled for 10 minutes, cooled and filtered. The filtrate is called **"SODIUM CARBONATE EXTRACT".**			
1	**Barium Chloride Test:** To a few drops of the extract, **dilute Hydrochloric Acid** is added until the effervescence ceases and 2 ml of **Barium chloride** solution is added.	No white precipitate.	Absence of Sulphate
2	**Silver Nitrate Test:** To a few drops of the extract **dilute Nitric Acid** is added until the effervescence ceases and 2 ml of **Silver Nitrate** solution is added.	No **curdy white precipitate,**	Absence of **Chloride.**
3	**Lead Acetate Test** To a few drops of the extract dilute acetic acid is added until the effervescence ceases and 2 ml of **Lead acetate** solution is added	No precipitate	Absence of sulphate
4	**Brown Ring Test:** To a few drops of extract **dilute Sulphuric acid** is added until the effervescence ceases, then **freshly prepared $FeSO_4$** is added and then **conctrated Sulphuric acid** is added drop by drop along the sides of the test tube.	No brown ring.	Absence of Nitrate.
IDENTIFICATION OF THE BASIC RADICALS **PREPARATION OF ORIGINAL SOLUTION:** **The orginal solution prepared by dissolving a small amound of salt in water**			
	ZERO GROUP		
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**Reddish brown**precipitate.	**Ammonium** is confirmed.
	GROUP SEPARATION		

2	To a few drops of the original solution 2 ml of **dilute HCl** is added	No characteristic precipitate.	Absence of First Group (Lead).
3	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added.	No characteristic precipitate.	Absence of Third Group (Aluminium).
4	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added and**H_2S** gas is passed.	No characteristic precipitate.	Absence of Fourth Group (Zinc).
5	To a few drops of the original solution 1 ml **NH_4Cl**, 2 ml **NH_4OH** and 2 ml **$(NH_4)_2CO_3$** solutions are added.	No characteristic precipitate	Absence of Fifth Group (Calcium **and**Barium).
6	To a few drops of the original solution 1 ml **NH_4Cl**, 2 ml **NH_4OH** and 2 ml **Di Sodium Hydrogen Phosphate** are added.	No characteristic precipitate.	Absence of Sixth Group (Magnesium).
CONFIRMATORY TESTS FOR BASIC RADICALS			
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**Reddish brown** precipitate.	**Ammonium** is confirmed.

RESULT

The given simple salt contains

1. Basic Radical **: Ammonium**

2. Acid Radical **: Carbonate**

The given simple salt is **: Ammonium Carbonate**

Simple salt analysis –VII

DATE **PRELIMINARY TESTS**

S. No.	EXPERIMENT	OBSERVATION	INFERENCE
1	**a)Colour** Colour of the salt is noted	Colourless	Absence of copper and iron salt
	b)Appearance Appearance of the salt is noted	crystaline	May be Sulphate, Nitrate, Chloride
2	**Solubility** A little of the salt is shaken with **water.**	Soluble	May be Sulphate, Nitrate, Chloride or Ammonium Carbonate.
3	**Action Of Heat**: A small amount of the salt is **heated** gently in a dry test tube.	No characteristic change.	Absence of Carbonate, Nitrate, Ammonium and Zinc.
4	**Flame Test**: A small amount of the salt is made into a paste with **conc. HCl** in a watch glass and introduced into the non-luminous part of the Bunsen flame.	No characteristic coloured flame	Absence of Calcium and Barium.
5	**Ash Test:** A filter paper is soaked into a paste of the salt with **conc. HCl / HNO_3** And **Cobalt Nitrate** solution in a watch glass and burnt.	**Pink** ash.	Presence of **Magnesium.**
IDENTIFICATION OF ACID RADICALS			
6	**Action Of Dil Hcl** To a small amount of **dilute HCl** the salt is added.	No characteristic change.	Absence of Sulphide and Carbonate.
7	**Copper Turnings Test:** A small amount of the salt is heated with **Copper Turnings** and a few drops of **conc. Sulphuric acid.**	No reddish brown gas is evolved.	Absence of Nitrate.
8	**Action Of NaOH**: A small amount of the salt is heated with **Sodium Hydroxide.**	No pungent smelling gas.	Absence of Ammonium.
9	**Chromyl Chloride Test:** To a small amount of the salt a pinch of **Potassium Dichromate** is added and	No Red orange vapours.	Absence of chloride.

	heated with few drops of **conc. Sulphuric acid.**		
PREPARATION OF SODIUM CARBONATE EXTRACT: A small amount of salt is mixed with twice the amount of sodium carbonate and 20ml of distilled water is added, boiled for 10 minutes, cooled and filtered. The filtrate is called **"SODIUM CARBONATE EXTRACT".**			
1	**Barium Chloride Test:** To a few drops of the extract, **dilute Hydrochloric Acid** is added until the effervescence ceases and 2 ml of **Barium chloride** solution is added.	A **white precipitate, insoluble** in conc. HCl.	**Sulphate** is confirmed.
2	**Silver Nitrate Test:** To a few drops of the extract **dilute Nitric Acid** is added until the effervescence ceases and 2 ml of **Silver Nitrate** solution is added.	No precipitate.	Absence of chloride/ sulphide
3	**Lead Acetate Test** To a few drops of the extract dilute acetic acid is added until the effervescence ceases and 2 ml of **Lead acetate** solution is added	White precipitate soluble in ammonium acetate and sodium hydroxide is obtained	Presence of sulphate
4	**Brown Ring Test:** To a few drops of extract **dilute Sulphuric acid** is added until the effervescence ceases, then **freshly prepared $FeSO_4$** is added and then **conctrated Sulphuric acid** is added drop by drop along the sides of the test tube.	No brown ring.	Absence of Nitrate.
IDENTIFICATION OF THE BASIC RADICALS **PREPARATION OF ORIGINAL SOLUTION:** **The orginal solution prepared by dissolving a small amound of salt in water**			
ZERO GROUP			
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**No Reddish brown** precipitate.	Absence **of Ammonium**
GROUP SEPARATION			
2	To a few drops of the original solution 2 ml of **dilute HCl** is added	No characteristic precipitate.	Absence of First Group (Lead).
3	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added.	No characteristic precipitate.	Absence of Third Group (Aluminium).
4	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added and**H_2S** gas is passed.	No characteristic precipitate.	Absence of Fourth Group (Zinc).
5	To a few drops of the original solution 1 ml **NH_4Cl**, 2 ml **NH_4OH** and 2 ml **$(NH_4)_2CO_3$** solutions are added.	No characteristic precipitate	Absence of Fifth Group (Calcium **and**Barium).
6	To a few drops of the original solution 1 ml **NH_4Cl**, 2 ml **NH_4OH** and 2 ml **Di Sodium Hydrogen Phosphate** are added.	**White** precipitate.	Presence of **Sixth Group (Magnesium).**
CONFIRMATORY TESTS FOR BASIC RADICALS			
2	To a few drops of the original solution **Magneson reagent**is added**.**	**Blue** precipitate.	**Magnesium** is confirmed.

RESULT

The given simple salt contains

1. Basic Radical **: Magnesium**

2. Acid Radical **: Sulphate**

The given simple salt is **: Magnesium Sulphate**

Simple salt analysis –VIII

DATE **PRELIMINARY TESTS**

S. No.	EXPERIMENT	OBSERVATION	INFERENCE
1	**a)Colour** Colour of the salt is noted	Colourless	Absence of copper and iron salt
	b)Appearance Appearance of the salt is noted	crystaline	May be Sulphate, Nitrate, Chloride
2	**Solubility**	Soluble	May be Sulphate, Nitrate, Chloride or

	A little of the salt is shaken with **water.**		Ammonium Carbonate.
3	**Action Of Heat**: A small amount of the salt is **heated** gently in a dry test tube.	No characteristic change.	Absence of Carbonate, Nitrate, Ammonium and Zinc.
4	**Flame Test**: A small amount of the salt is made into a paste with **conc. HCl** in a watch glass and introduced into the non-luminous part of the Bunsen flame.	Grassy green flame.	Presence of**Barium**.
5	**Ash Test:** A filter paper is soaked into a paste of the salt with **conc. HCl / HNO_3** And **Cobalt Nitrate** solution in a watch glass and burnt.	No characteristic coloured ash.	Absence of Zinc, Aluminium and Magnesium.
	IDENTIFICATION OF ACID RADICALS		
6	**Action Of Dil Hcl** To a small amount of **dilute HCl** the salt is added.	No characteristic change.	Absence of Sulphide and Carbonate.
7	**Copper Turnings Test:** A small amount of the salt is heated with **Copper Turnings** and a few drops of **conc. Sulphuric acid.**	No reddish brown gas is evolved.	Absence of Nitrate.
8	**Action Of NaOH**: A small amount of the salt is heated with **Sodium Hydroxide.**	No pungent smelling gas.	Absence of Ammonium.
9	**Chromyl Chloride Test:** To a small amount of the salt a pinch of **Potassium Dichromate** is added and heated with few drops of **conc. Sulphuric acid.**	**Red orange vapours**evolved are passed through water to get a yellow solution, which on adding **Lead acetate**forms a **yellowprecipitate**	**Chloride** is confirmed.
PREPARATION OF SODIUM CARBONATE EXTRACT: A small amount of salt is mixed with twice the amount of sodium carbonate and 20ml of distilled water is added, boiled for 10 minutes, cooled and filtered. The filtrate is called **"SODIUM CARBONATE EXTRACT".**			
1	**Barium Chloride Test:** To a few drops of the extract, **dilute Hydrochloric Acid** is added until the effervescence ceases and 2 ml of **Barium chloride** solution is added.	No white precipitate.	Absence of Sulphate
2	**Silver Nitrate Test:** To a few drops of the extract **dilute Nitric Acid** is added until the effervescence ceases and 2 ml of **Silver Nitrate** solution is added.	A **curdy white precipitate, soluble** in excess of Ammonium hydroxide.	Presence of **Chloride.**
3	**Lead Acetate Test** To a few drops of the extract dilute acetic acid is added until the effervescence ceases and 2 ml of **Lead acetate** solution is added	No precipitate	Absence of sulphate
4	**Brown Ring Test:** To a few drops of extract **dilute Sulphuric acid** is added until the effervescence ceases, then **freshly prepared $FeSO_4$** is added and then **conctrated Sulphuric acid** is added drop by drop along the sides of the test tube.	No brown ring.	Absence of Nitrate.
IDENTIFICATION OF THE BASIC RADICALS **PREPARATION OF ORIGINAL SOLUTION:** **The orginal solution prepared by dissolving a small amound of salt in water**			
	ZERO GROUP		
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**No Reddish brown** precipitate.	Absence **of Ammonium**
	GROUP SEPARATION		
2	To a few drops of the original solution 2 ml of **dilute HCl** is added	No characteristic precipitate.	Absence of First Group (Lead).
3	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added.	No characteristic precipitate.	Absence of Third Group (Aluminium).
4	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added and**H_2S** gas is passed.	No characteristic precipitate.	Absence of Fourth Group (Zinc).
5	To a few drops of the original solution 1 ml	**White** precipitate.	Presence of Fifth

	NH_4Cl, 2 ml **NH_4OH** and 2 ml **$(NH_4)_2CO_3$** solutions are added.		Group **(Calcium orBarium).**
	CONFIRMATORY TESTS FOR BASIC RADICALS		
1	To a few drops of the original solution **Potassium Chromate** is added.	**Yellow precipitate, soluble** in acid.	**Barium** is confirmed.

RESULT

The given simple salt contains

1. Basic Radical **: Barium**

2. Acid Radical **: Chloride**

The given simple salt is **: Barium Chloride**

Simple salt analysis –IX

DATE **PRELIMINARY TESTS**

S. No.	EXPERIMENT	OBSERVATION	INFERENCE
1	**a)Colour** Colour of the salt is noted	Colourless	Absence of copper and iron salt
	b)Appearance Appearance of the salt is noted	crystaline	May be Sulphate, Nitrate, Chloride
2	**Solubility** A little of the salt is shaken with **water.**	Soluble	May be Sulphate, Nitrate, Chloride or Ammonium Carbonate.
3	**Action Of Heat**: A small amount of the salt is **heated** gently in a dry test tube.	No characteristic change.	Absence of Carbonate, Nitrate, Ammonium and Zinc.
4	**Flame Test**: A small amount of the salt is made into a paste with **conc. HCl** in a watch glass and introduced into the non-luminous part of the Bunsen flame.	No characteristic coloured flame	Absence of Calcium and Barium.
5	**Ash Test:** A filter paper is soaked into a paste of the salt with **conc. HCl / HNO_3** And **Cobalt Nitrate** solution in a watch glass and burnt.	**Blue** ash.	Presence of **Aluminium.**
	IDENTIFICATION OF ACID RADICALS		
6	**Action Of Dil Hcl** To a small amount of **dilute HCl** the salt is added.	No characteristic change.	Absence of Sulphide and Carbonate.
7	**Copper Turnings Test:** A small amount of the salt is heated with **Copper Turnings** and a few drops of **conc. Sulphuric acid.**	No reddish brown gas is evolved.	Absence of Nitrate.
8	**Action Of NaOH**: A small amount of the salt is heated with **Sodium Hydroxide.**	No pungent smelling gas.	Absence of Ammonium.
9	**Chromyl Chloride Test:** To a small amount of the salt a pinch of **Potassium Dichromate** is added and heated with few drops of **conc. Sulphuric acid.**	No Red orange vapours.	Absence of chloride.
PREPARATION OF SODIUM CARBONATE EXTRACT: A small amount of salt is mixed with twice the amount of sodium carbonate and 20ml of distilled water is added, boiled for 10 minutes, cooled and filtered. The filtrate is called **"SODIUM CARBONATE EXTRACT".**			
1	**Barium Chloride Test:** To a few drops of the extract, **dilute Hydrochloric Acid** is added until the effervescence ceases and 2 ml of **Barium chloride** solution is added.	A **white precipitate, insoluble** in conc. HCl.	**Sulphate** is confirmed.

2	**Silver Nitrate Test:** To a few drops of the extract **dilute Nitric Acid** is added until the effervescence ceases and 2 ml of **Silver Nitrate** solution is added.	No precipitate.	Absence of chloride/ sulphide
3	**Lead Acetate Test** To a few drops of the extract dilute acetic acid is added until the effervescence ceases and 2 ml of **Lead acetate** solution is added	White precipitate soluble in ammonium acetate and sodium hydroxide is obtained	Presence of sulphate
4	**Brown Ring Test:** To a few drops of extract **dilute Sulphuric acid** is added until the effervescence ceases, then **freshly prepared $FeSO_4$** is added and then **conctrated Sulphuric acid** is added drop by drop along the sides of the test tube.	No brown ring.	Absence of Nitrate.
IDENTIFICATION OF THE BASIC RADICALS **PREPARATION OF ORIGINAL SOLUTION:** **The orginal solution prepared by dissolving a small amound of salt in water**			
ZERO GROUP			
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**No Reddish brown** precipitate.	Absence **of Ammonium**
GROUP SEPARATION			
2	To a few drops of the original solution 2 ml of **dilute HCl** is added	No characteristic precipitate.	Absence of First Group (Lead).
3	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added.	No characteristic precipitate.	Absence of Third Group (Aluminium).
CONFIRMATORY TESTS FOR BASIC RADICALS			
1	To a few drops of the original solution **Ammonium Hydroxide** and **Aluminon reagent** are added.	A **bright red lake.**	**Aluminium** is confirmed.

RESULT

The given simple salt contains

1. Basic Radical **: Aluminium**

2. Acid Radical **: Sulphate**

The given simple salt is **: Aluminium Sulphate**

Simple salt analysis –X

DATE **PRELIMINARY TESTS**

S. No.	EXPERIMENT	OBSERVATION	INFERENCE
1	**a)Colour** Colour of the salt is noted	Colourless	Absence of copper and iron salt
	b)Appearance Appearance of the salt is noted	powdery	May be carbonate and sulphide
2	**Solubility** A little of the salt is shaken with **water.**	insoluble	May be carbonate and sulphide
3	**Action Of Heat**: A small amount of the salt is **heated** gently in a dry test tube.	No characteristic change.	Absence of Carbonate, Nitrate, Ammonium and Zinc.
4	**Flame Test**: A small amount of the salt is made into a paste with **conc. HCl** in a watch glass and introduced into the non-luminous part of the Bunsen flame.	No characteristic coloured flame	Absence of Calcium and Barium.
5	**Ash Test:** A filter paper is soaked into a paste of the salt with **conc. HCl / HNO_3** And **Cobalt Nitrate** solution in a watch glass and burnt.	**Gree*n*** ash.	Presence of **Zi*n*c.**

	IDENTIFICATION OF ACID RADICALS		
6	**Action Of Dil Hcl** To a small amount of **dilute HCl** the salt is added.	**Rotten egg smelling gas** turning Lead acetate paper **black**.	**Sulphide** is confirmed.
7	**Copper Turnings Test:** A small amount of the salt is heated with **Copper Turnings** and a few drops of **conc. Sulphuric acid.**	No reddish brown gas is evolved.	Absence of Nitrate.
8	**Action Of NaOH**: A small amount of the salt is heated with **Sodium Hydroxide.**		
9	**Chromyl Chloride Test:** To a small amount of the salt a pinch of **Potassium Dichromate** is added and heated with few drops of **conc. Sulphuric acid.**	No Red orange vapours.	Absence of chloride.
PREPARATION OF SODIUM CARBONATE EXTRACT: A small amount of salt is mixed with twice the amount of sodium carbonate and 20ml of distilled water is added, boiled for 10 minutes, cooled and filtered. The filtrate is called **"SODIUM CARBONATE EXTRACT".**			
1	**Barium Chloride Test:** To a few drops of the extract, **dilute Hydrochloric Acid** is added until the effervescence ceases and 2 ml of **Barium chloride** solution is added.	No white precipitate.	Absence of Sulphate
2	**Silver Nitrate Test:** To a few drops of the extract **dilute Nitric Acid** is added until the effervescence ceases and 2 ml of **Silver Nitrate** solution is added.	A **black precipitate.**	Presence of **Sulphide.**
3	**Lead Acetate Test** To a few drops of the extract dilute acetic acid is added until the effervescence ceases and 2 ml of **Lead acetate** solution is added	A black precipitate insoluble in hot nitric acid is obtained	Presence of sulphide
4	**Brown Ring Test:** To a few drops of extract **dilute Sulphuric acid** is added until the effervescence ceases, then **freshly prepared $FeSO_4$** is added and then **conctrated Sulphuric acid** is added drop by drop along the sides of the test tube.	No brown ring.	Absence of Nitrate.
IDENTIFICATION OF THE BASIC RADICALS **PREPARATION OF ORIGINAL SOLUTION:** **The orginal solution prepared by dissolving a small amound of salt in dil HNO_3**			
	ZERO GROUP		
1	To a few drops of the original solution **Sodium Hydroxide** and **Nessler's reagent** are added.	**No Reddish brown** precipitate.	Absence **of Ammonium**
	GROUP SEPARATION		
2	To a few drops of the original solution 2 ml of **dilute HCl** is added	No characteristic precipitate.	Absence of First Group (Lead).
3	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added.	No characteristic precipitate.	Absence of Third Group (Aluminium).
4	To a few drops of the original solution 1 ml **NH_4Cl** and 2 ml **NH_4OH**solutions are added and**H_2S** gas is passed.	**Dirty white**precipitate.	Presence of **Fourth Group (Zinc).**
	CONFIRMATORY TESTS FOR BASIC RADICALS		
1	To a few drops of the original solution **Potassium Ferro cyanide** is added**.**	**White precipitatesoluble** in excess of Sodium hydroxide **&insoluble** in dilute acid.	**Zinc** is confirmed.

RESULT

The given simple salt contains

1. Basic Radical **: Zinc**

2. Acid Radical **: Sulphide**

The given simple salt is **: Zinc Sulphide**

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