



Federal Board HSSC Examination
Chemistry Practical Model Question Paper

Time allowed: 3 hours

Total Marks: 30

Major Experiments:

Q.1 Identify the acid base radicals. (8)

Q.2 Find the water of crystallization in $\text{FeSO}_4 \cdot x \text{H}_2\text{O}$. (8)

OR

Find the amount of NaHCO_3 per 1000 cm^3 . (8)

Minor Experiments:

Q.3 Find heat of neutralization. (6)

OR

How can you prepare the Iodoform? (6)

Note Book (4)

Viva Voce (4)

INSTRUCTIONS:

For Q.2 Write procedure	2
Equation	1
Observation	2
Calculation	3
For Q.1	
Identification of ion	1.5+1.5
Dry Test	1
Confirmatory Test	
2 for acidic radical	2
2 for basic radical	2
For Q.3	
Performance	3
Procedure	3

SAMPLES FOR ANALYSIS OF CATIONS

- NOTE:
- i) No insoluble salt should be given.
 - ii) No group identification is required.
 - iii) Apply dry tests for identification of Cations.

SALT: 1

Experiment	Observation	Inference
Observe colour of salt	Dry tests Salt is white	NH_4^+ , Mg^{+2} , Al^{+3} , Ca^{+2} , Cr^{+3} , Zn^{+2} , Ba^{+2} , Pb^{+2} May be present
Apply flame test	Brick red flame	Ca^{+2} may be present
Original solution + aq. NaOH	Wet test White ppt formed	Ca^{+2} is present
Original solution + aq. NH_4OH	No white ppt	Ca^{+2} is present

SALT: 2

Experiment	Observation	Inference
Observe colour of salt	Dry tests If Salt is coloured	Cu^{+2} , Cr^{+3} , Mn^{+2} , Fe^{+2} or Fe^{+3} May be present
Cation indication from salt colour	Salt is light pink	Mn^{+2} is present
Original solution+ aq. NaOH	Wet tests Off-white ppt. insoluble in excess No white ppt.	Mn^{+2} is present
Original solution+ aq. NH_4OH	Off-white ppt. insoluble in excess	Mn^{+2} is present

SAMPLES FOR ANALYSIS OF ANIONS.

SALT : 3

Experiment	Observation	Inference
Aq. Sol. of salt + BaCl ₂ sol.	White ppts are formed	Group I is present
Above ppts. + dil HCl	A colourless /odourless gas comes out	CO ₃ ⁻² is present
CONFIRMATORY TEST: Aq. sol. of salt + MgCl ₂ Aq. sol. of salt + SrCl ₂	White ppt. are formed White ppt. are formed	Carbonate is confirmed Carbonate is confirmed

SALT : 4

Experiment	Observation	Inference
Aq. Sol of salt + BaCl ₂ sol.	No White ppts are formed	Group I is absent hence
Aq.sol of salt + AgNO ₃	White ppts are formed	Group II is present Cl ¹⁻ is present
CONFIRMATORY TESTS: Chromyl chloride test : Solid salt + solid K ₂ Cr ₂ O ₇ + conc. H ₂ SO ₄ +heat	Heavy red vapours of Chromyl chloride (CrO ₂ Cl ₂) are evolved. On passing these vapours through NaOH solution a yellow solution is formed which gives a yellow ppt. Of lead chromate on adding acetic acid and lead acetate	Chloride is confirmed
Salt + MnO ₂ + conc. H ₂ SO ₄ + heat	Greenish-yellow gas, chlorine, evolves with bleaches litmus.	Chloride is confirmed

SALT : 5

Experiment	Observation	Inference
Aq. Sol of salt + BaCl ₂ sol.	ppts are formed	Group I is present
Observe colour of ppts.	yellow ppts are formed	CrO ₄ ²⁻ is present
CONFIRMATORY TESTS:		
Aq. Solution of salt + Dil H ₂ SO ₄ solution	Yellow ppts. are formed	CrO ₄ ²⁻ radical is confirmed
Aq. Solution of salt + AgNO ₃ solution	Red ppts. are formed	CrO ₄ ²⁻ radical is confirmed