



Code	Subject Title	Cr. Hrs	Semester
CHEM-104	Chemistry-II (Inorganic Chemistry)	3	II
Year	Discipline		
1	Botany, Zoology, Chemistry-I, II		

**PAPER CHROMATOGRAPHY**

Separation & identification of cations/basic radicals of group I, II.A, II.B & III. Also calculate their R<sub>f</sub> values.

**ARGENTOMETRY****MOHR'S METHOD**

- 1) Determine the %age purity of NaCl (rock salt)
- 2) Determine the amount of NaCl in the commercial sample of soda ash.

**VOLHARD'S METHOD**

- 1) Determination of %age purity of HCl.
- 2) Determination of silver in the given sample, using KSCN or NH<sub>4</sub>SCN.

**REDOX TITRATIONS (By using both internal and external indicators)**

- 1) Determination of amount/dm<sup>3</sup> of FeSO<sub>4</sub>·7H<sub>2</sub>O with K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>.
- 2) Determination of %age purity of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> by using standard solution of Mohr's salt.
- 3) Determination of number of water molecules (x) in FeSO<sub>4</sub>·xH<sub>2</sub>O using K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>.
- 4) Determination of Ca<sup>2+</sup> by KMnO<sub>4</sub>.
- 5) Determination of %age of iron in ferric alum (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>·Fe<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>·24H<sub>2</sub>O using K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>.

**COMPLEXOMETRY**

- 1) Standardization of EDTA solution by magnesium/zinc sulfate solution.
- 2) Find out the amount of Ca<sup>2+</sup> in the given sample of marble (lime stone).
- 3) Determination of Ca<sup>2+</sup> and Mg<sup>2+</sup> in the sample by using EDTA.

**Books Recommended:**

1. Vogel, "A.I.A. Text Book of Macro and Semi micro-qualitative Inorganic Analysis", Longman Green & Co., (1995).
2. Skoog, D.A., D.M. West and F.J. Holler, "Analytical Chemistry", 6<sup>th</sup> Edition, Saunders College Publications, (1994).
3. Javed Iqbal, Amin, "Theory and Practice of chromatography", Higher Education Commission, Islamabad, (2002).