



ARSD College, University of Delhi

Model Course Handout/Lesson Plan

Course Name : B.Sc. (H) Chemistry						
Semester	Course Code	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Credit (C)
I	32171101	Inorganic Chemistry I: Atomic Structure & Chemical Bonding	0	0	4	2
Teacher/Instructor(s)		Dr. Naorem Premjit Singh, Dr. Neeraj Mishra				
Session		2021-22				

Course Description:

The course reviews the structure of the atom, which is a necessary pre-requisite in understanding the nature of chemical bonding in compounds. It also provides basic knowledge about ionic, covalent and metallic bonding and explains that chemical bonding is best regarded as a continuum between the three cases. It also discusses the periodicity in properties with reference to the *s* and *p* block, which is necessary in understanding their group chemistry.

List of Experiments:

1. Titrimetric Analysis: (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality.
2. Estimation of sodium carbonate using standardized HCl.
3. Estimation of carbonate and hydroxide present together in a mixture.
4. Estimation of carbonate and bicarbonate present together in a mixture.
5. Estimation of free alkali present in different soaps/detergents
6. Estimation of Fe (II) using standardized KMnO_4 solution
7. Estimation of oxalic acid using standardized KMnO_4 solution
8. Estimation of oxalic acid and sodium oxalate in a given mixture.
9. Estimation of Fe(II) with $\text{K}_2\text{Cr}_2\text{O}_7$ using internal indicator
10. Estimation of Fe(II) with $\text{K}_2\text{Cr}_2\text{O}_7$ using external indicator

Details of the Lab Course		
Session	Name of Experiment	Contact Hours
1	Titrimetric Analysis: (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality.	8
2	Estimation of sodium carbonate using standardized HCl.	4
3	Estimation of carbonate and hydroxide present together in a mixture.	8
4	Estimation of carbonate and bicarbonate present together in a mixture.	4
5	Estimation of free alkali present in different soaps/detergents	4
6	Estimation of Fe (II) using standardized KMnO_4 solution	4

7	Estimation of oxalic acid using standardized KMnO_4 solution	4
8	Estimation of oxalic acid and sodium oxalate in a given mixture.	4
9	Estimation of Fe(II) with $\text{K}_2\text{Cr}_2\text{O}_7$ using internal indicator	4
10	Estimation of Fe(II) with $\text{K}_2\text{Cr}_2\text{O}_7$ using external indicator	4
11	Revision	8
12	Mock test	4
Total		60
Suggested Books:		
Sl. No.	Name of Authors/Books/Publishers	Year of Publication/Reprint
1.	Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), Vogel's Textbook of Quantitative Chemical Analysis, John Wiley and Sons.	1989

Evaluation Scheme:

No.	Component	Duration	Marks
1.	Internal Assessment		25
	• Quiz/Viva		
	• Observation & Record		
	• Attendance		
	• Model Exam		
2.	End Semester Examination	5 hrs	25