

Odd Semester I Practicals

Name of the college: Government College of Arts, Science and Commerce, Sanquelim, Goa		
Name of Faculty: Ms. Rosalina Desilva	Subject: Fundamentals of Chemistry (Major)	
Paper code: CHC 100	Program: F.Y.B.Sc.	Division:
Academic year: 2024 - 2025	Semester: I	Total Practical/Labs: 15 (30 hours)
Credits: 1		
Course Objectives:		
<ul style="list-style-type: none">• To translate certain theoretical concepts learnt earlier into experimental knowledge by providing hands on experience of basic laboratory techniques required for chemistry.• To introduce the fundamentals and basic techniques of volumetric and gravimetric estimations.		
Expected Course Outcome:		
At the end of the course students will be able:		
CO1: to perform basic volumetric and gravimetric estimations.		
CO2: to purify organic compounds using purification techniques.		
CO3: to identify chemical nature of different types organic compounds.		
Student Learning Outcome:		
At the end of the course students will be able:		
LO1: to acquire the knowledge and skill of basic volumetric and gravimetric estimations.		
LO2: to get hands on experience on the purification techniques for organic compounds.		
LO3: to get hands on experience on the identification of chemical nature of organic compounds.		

Month	Practical/Labs Scheduled Date	No. of Practical /Labs planned	List of Experiments	Reference books
July	05-07-2024	1 (Batch I)	Pre-Lab session (Laboratory safety, concept of normality and molarity and stoichiometric calculations).	[1, 2]
	12-07-2024	1 (Batch I)	Calibration of Burette and Pipettes.	[1]
	19-07-2024	1 (Batch I)	Purification of organic compounds: i) Recrystallization of Benzoic acid by using water as solvent and determination of melting point.	[1]
	26-07-2024	1 (Batch I)	Purification of organic compounds: ii) Sublimation of Naphthalene and Determination of Melting point.	[1]
August	02-08-2024	1 (Batch I)	Determination of solubility and chemical nature of both solids and liquids.	[1]
	09-08-2024	1 (Batch I)	Determination of solubility and chemical nature of both solids and liquids.	[1]
	16-08-2024	1 (Batch I)	To prepare 100 mL of standard 0.1 M $K_2Cr_2O_7$ solution and carry out dilution to 0.05, 0.01, 0.005, and 0.001 M in 100 mL standard flasks.	[2]
	23-08-2024	1 (Batch I)	Volumetry: To prepare 100 ml of 0.1 N KHP solution and standardize the given approximate 0.1 N NaOH solution.	[2]
	30-08-2024	1 (Batch I)	Gravimetric analysis: Determination of percentage composition of the given mixture ZnO + ZnCO ₃	[2]
September	13-09-2024	1 (Batch I)	Determination of viscosity of two unknown liquids or dilute solutions by using Ostwald's viscometer.	[3,4]

	20-09-2024	1 (Batch I)	Determination of viscosity of two unknown liquids or dilute solutions by using Ostwald's viscometer	[3,4]
	27-09-2024	1 (Batch I)	Study of the variation of viscosity of an aqueous solution with concentration of solute.	[3,4]
October	04-10-2024	1 (Batch I)	Purification of organic compounds: iii) Distillation of Acetone and determination of boiling point.	[1]
	11-10-2024	1 (Batch I)	Determination of surface tension of two unknown liquids or dilute solutions by stalagmometer method.	[3,4]
	18-10-2024	1 (Batch I)	Determination of surface tension of two unknown liquids or dilute solutions by stalagmometer method.	[3,4]

References:

- [1] A.I. Vogel, A., R. Tatchell, B. S. Furniss, A.J. Hannaford, Vogel's Textbook of Practical Organic Chemistry, 5thEd., Prentice Hall; 2011.
 [2] Svehla, G. Vogel's Qualitative Inorganic Analysis, Pearson Education, 2012.
 [3] S. W. Rajbhoj and T. K. Chondhekar, Systematic Experimental Physical Chemistry, Anjali Publication, Second Edition 2000.
 [4] Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).

* Assessment Rubrics	
Component	Max Marks
ISA	15
Practical	25
Semester End Exam	60