

PHYSICAL CHEMISTRY PRACTICALS

Semester	Subject Code	Category	Lecture Hours		Theory hours		Practical hours		Credits
			Per week	Per sem.	Per week	Per sem.	Per week	Per sem.	
VI	21CCH63	Practical-V	-	-	-	-	3	45	3

1. Determination of the rate constant of acid catalysed hydrolysis of an ester (methyl or ethyl acetate) at room temperature.
2. Determination of the rate constant of the reaction between persulphate and iodide.
3. Determination of the rate constant of Iodination of acetone
4. Determination of Molecular weight of a solute by Rast's method (using naphthalene, or biphenyl as solvents).
5. Determination of Critical solution temperature and the composition of partially miscible liquids - *Phenol-water system.
6. Determination of effect of impurity – 2% NaCl or succinic acid solutions on phenol water system and determination of concentration of the given solution.
7. Determination of the transition temperature of the given salt hydrate - $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$, $\text{CH}_3\text{COONa} \cdot 3\text{H}_2\text{O}$, $\text{SrCl}_2 \cdot 6\text{H}_2\text{O}$, $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$.
8. Determination of cell constant and equivalent conductivities of solutions of three different concentrations by conductivity measurements.
9. Determination of concentration of the given strong acid using a strong base by conductometric titration.
10. Determination of concentration of the given strong acid using a strong base by potentiometric titration.
11. *UV- Spectrophotometer: Determination of unknown concentration of copper.
12. *Colorimetry: Determination of unknown concentration of copper using Photoelectric colorimeter

Students must write short procedure / formula with explanations in ten minutes for evaluation

***Need not to be given in examination**

TEACHING METHODOLOGY:

- Chalk and Board
- Demonstration
- Conducting Experiments
- Conducting Viva

SYLLABUS DESIGNER:

- Dr. S. Santha Lakshmi, Assistant Professor of Chemistry
- Dr. R. Arunadevi, Assistant Professor of Chemistry

SCHEME OF VALUATION FOR PRACTICAL EXAMINATIONS

PRACTICAL - V

PHYSICAL CHEMISTRY PRACTICALS

Internal assessment: 40 Marks

External assessment: 60 marks

Total: 100 marks

Record	:	10 Marks
Viva	:	5 Marks
Experiment	:	30 marks
Manipulation, Tabulation and Calculation	:	15 marks
Kinetics	Graph	: 10 marks
	Below a factor of 10	: 20 marks
	By a factor of 10	: 15 marks
	More than factor of 10	: 10 marks
Molecular weight	Error upto 10 %	: 30 marks
	11- 20 %	: 20 marks
	21- 30 %	: 15 marks
	>30 %	: 10 marks
Effect of electrolyte on CST	Error upto 10 %	: 30 marks
	11- 20 %	: 20 marks
	21- 30 %	: 15 marks
	>30 %	: 10 marks
Transition temperature	Error upto 2°C difference	30 marks
	3-7° C difference	15 marks

	>7°C difference	10 marks
Conductance	Equivalent conductance:	15 marks
	Cell constant	15 marks
	In both the cases:	15 marks
	Error upto 10%	
	11- 15%	10 marks
	>15%	5 marks
Conductometric titrations	Error upto 10 %	: 30 marks
	11- 20 %	: 20 marks
	21- 30 %	: 15 marks
	>30 %	: 10 marks
Potentiometric titrations	Error upto 10 %	: 30 marks
	11- 20 %	: 20 marks
	21- 30 %	: 15 marks
	>30 %	: 10 marks