

**ST. JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM**  
**VII SEMESTER                      B.Sc. HONOURS CHEMISTRY                      Time: 2Hrs/Week**  
**Code CH 7253(2)      Revised Syllabus under CBCS 2020-21                      Marks: 50**  
**Physical Chemistry Practical – I**

**I.**

**Course Objective:** To train students in quantitative estimation using conductometry

**Course Outcomes:**

On successful completion of this practical course, student shall be able to:

- List out, identify and handle various equipment in Chemistry lab.
- Learn and apply the concepts of electro chemistry in experiments.
- Be familiar with electro analytical methods and techniques which study an analyte by measuring the potential ( volts) and / or current ( amperes) in an electro chemical cell containing the analyte..
- Learn the procedures of preparation of standard solutions.5. Acquire skills in operation and calibration of instruments.

**II. Syllabus:**

Total Hours: 30h (2h/week)

- 1) Conductometric titration of Strong acid versus Strong base
- 2) Dissociation constant of weak acid ( $\text{CH}_3\text{COOH}$ ) by conductometric method.
- 3) Conductometric titration of Weak acid vs Strong base.
- 4) Determination of cell constant
- 5) Acid-catalyzed hydrolysis of methyl acetate
- 6) Determination of partial molar volume of solute – $\text{H}_2\text{O}$  system by apparent molar volume method.

**III. Co-Curricular Activities**

**Mandatory:** (Lab/field training of students by teacher: (lab:10+field:05):

1. **For Teacher:** Training of students by the teacher in laboratory and field for not less than 15 hours on the field techniques/skills of handling conductometric titrations.
2. **For Students:** Students shall visit related industry/chemistry laboratory in universities/research organizations/private sector facility and observe the synthetic reactions. Write their observations and submit a hand written fieldwork/project work report not exceeding 10 pages in the given format to the teacher.

3. Max marks for Field work/projectworkReport:05.
4. Suggested Format for Fieldwork/project work: Title page, student details, index page, details of place visited, observations, findings, and acknowledgements.
5. Unit tests (IE).

**IV. Reference books:**

1. Vogel's Text Book of Quantitative Chemical Analysis, J. Mendham, R. C. Denney, J. D. Barnes and M. J. Thomas, 4th & 6 th Ed. (Pearson Education Asia)