



**Devrukh Shikshan Prasarak Mandal's**  
**Nya. Tatyasaheb Athalye Arts, Ved. S.R. Sapre Commerce and**  
**Vid. Dadasaheb Pitre Science College**  
**(Autonomous)**

Late Kakasaheb Pandit Educational Campus,  
Devrukh, Dist: Ratnagiri- 415 804, Maharashtra

NAAC Accredited 'A' Grade (Third Cycle), Mumbai University Best College Award 2009-10

## **Syllabus**

**Programme: T. Y. B. Sc.**

**Course- Chemistry Practical-IV**

**w.e.f. Academic Year 2021-22**

**Choice Based Credit System**  
**T. Y. B. Sc.**  
**Chemistry Syllabus**  
**To be implemented from the Academic year 2021-22**

**Course Content**

**Semester VI**

Course Code	Unit	Topics	Credits	L/Week
USCHT61	I	Chemical Thermodynamics & Chemical Kinetics		
	II	Polymers & Renewable Sources		
	III	Quantum Chemistry & Applied Electrochemistry		
	IV	NMR & ESR Spectroscopy		
USCHT62	I	Coordination Chemistry		
	II	Properties of Coordination Compounds		
	III	Organometallic Chemistry		
	IV	Some Selected Topics		
USCHT63	I	Stereochemistry & Biomolecules		
	II	Molecular Rearrangements & Carbohydrates		
	III	Spectroscopy-II		
	IV	Polymers; Catalysts & Reagents		
USCHT64	I	Electro Analytical Techniques		
	II	Methods of Separation-II & Introduction to Quality		
	III	Food and Cosmetics Analysis		
	IV	Thermal Methods and Analytical Method Validation		
USCHP61		Chemistry Practicals I		
USCHP62		Chemistry Practicals II		
USCHP63		Chemistry Practicals III		
USCHP64		Chemistry Practicals IV		

# Chemistry Practicals

## Semester VI

### Paper IV: Analytical Chemistry

1. Estimation of Chromium in water sample spectrophotometrically by using Diphenyl carbazide.
2. Estimation of reducing sugar in honey by Willstatter method.
3. Estimation of  $Mg^{+2}$  and  $Zn^{+2}$  by using anion exchange resin.
4. Estimation of acetic acid in Vinegar sample by using Quinhydrone electrode potentiometrically.
5. Determination of phosphoric acid in cola sample pH metrically.

[Note: Calculation of percent error is expected for all the experiments.]

### Reference Books for Practicals:

#### Analytical Chemistry

1. Principles of Instrumental Analysis, 5th Edition, By Skoog, Holler, Nieman.
2. Principles of Polarography by Jaroslav Heyrovský , Jaroslav Kůta, 1st Edition, Academic Press, eBook ISBN: 978148326478.
3. Solvent extraction and ion exchange, J Marcus and A. S. Kertes Wiley INC 1969. 4. D.A. Skoog D.M. West and F.J. Holler, Fundamentals of Analytical Chemistry, 7th Edition (printed in India in 2001) ISBN Publication.
4. Analytical Chemistry, J.G. Dick, 1973 Tata McGraw Hill Publishing Co. Ltd. New Delhi.
5. Quantitative analysis, Dey & Underwood, Prentice Hall of India, Pvt. Ltd. New Delhi
6. Fundamentals of Analytical Chemistry, Skoog 8th edition, Saunders college publishing