

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

B.Sc.Chemistry - END SEMESTER EXAMINATIONS - APRIL 2025
SEMESTER - II

22UCHCT2004 - Analytical Chemistry II

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. What is meant by dropping mercury electrode? List out its advantages and disadvantages.
2. Describe Soxhlet extraction.
3. Classify the various types of paper chromatography and discuss their applications.
4. Discuss the experimental details of GLC.
5. Describe the different parts of DTA apparatus with a block diagram.
6. Write the principle of steam distillation? Apply steam distillation to separate volatile compounds from a mixture.
7. How do you prepare a plate for TLC and activate it?
8. Differentiate between GC and HPLC.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Explain the setup and working of a Wheatstone bridge for measuring standard electrode potential.
10. (i) Apply DTA to investigate the decomposition behaviour of $\text{CaC}_2\text{O}_4 \cdot \text{H}_2\text{O}$ in air and CO_2
(ii) Predict the heat change associated with the titration of HCl with NaOH and explain it using a titration curve.
11. (i) Differentiate between distillation and fractional distillation.
(ii) Examine the importance of solvent selection in the recrystallization process. How does different solvents affect the purity of the final product ?
12. (i) Describe the method of separation of methylene blue and fluorescein by column chromatography.
(ii) How do you prepare a column for column chromatography?
13. How are the following separated using ion exchange chromatography?
(i) Zn and Mg (ii) Cl^- and Br^-
