

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. State Faraday's law of electrolysis and explain the working procedure of electrogravimetry.
2. Discuss any four important properties and uses of drying agents in the purification process.
3. Analyze the factors affecting thermogravimetric analysis results and suggest methods to minimize the resulting errors.
4. Explain the theory and experimental procedure of steam distillation with an example.
5. Describe the wet method of packing a column and list any four factors affecting the column efficiency.
6. Classify the two important types of paper chromatographic technique.
7. a) Differentiate cation and anion exchange resins with examples.
b) List any two important characteristics of a good resin.(3+2)
8. Elaborate on the applications of any three common types of detectors used in Gas Chromatography.

Section C

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

9. a) Classify any two important types of electrode polarization in electro analysis.
b) Demonstrate the merits of dropping mercury electrode over other electrodes in polarographic analysis. (6+4)
10. a) Explain the principle and main components of DTA instrumentation.
b) Draw and describe the DTA curve of sulphur. (6+4)
11. Describe the principle and procedure of the Soxhlet extraction method and justify how it is superior to conventional solvent extraction.

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12. Illustrate the principle and experimental procedure of TLC and highlight its merits over paper chromatography.
13. Critically analyze the principle of HPLC and provide a detailed discussion on the role of each component in its instrumentation.
