

Roll.No.

22UCHCT1002

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 - NOVEMBER 2025
SEMESTER - I

22UCHCT1002 - Analytical Chemistry

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

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

1. List the general safety rules in the laboratory.
2. Explain the procedure for the calibration and use of volumetric glassware.
3. Define the term primary and secondary standards with suitable examples.
4. Explain the theory of the use of metallochromic indicators. List the conditions for using it.
5. Explain the functions of sequestering agent with an example.
6. List the advantages and disadvantages of using organic precipitants.
7. The solubility product of aluminium hydroxide is $8.5 \times 10^{-23} \text{ mol}^4 \text{ lit}^{-4}$. Calculate the pH at which the precipitation of $\text{Al}(\text{OH})_3$ begins from a 0.01 M solution of $\text{Al}(\text{Cl})_3$.
8. Explain the importance of solubility product and common ion effect in qualitative analysis.

Section C

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

9. Illustrate the various techniques of handling and storage of different types of chemicals in the laboratory.
10. Describe the types and methods of minimisation of errors.
11. Discuss the theories of indicators for acid-base titrations.
12. Enumerate the mechanism of co-precipitation and post-precipitation.
13. a) Write the procedure for elimination of interfering anions.
b) Write any one test for the following ions.
(i) Borate (ii) Fluoride (iii) Nickel (iv) Cadmium
