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.
M.Sc.(Chemistry) END SEMESTER EXAMINATIONS NOVEMBER - 2023
SEMESTER - I
**22PCHET1001 - Analytical Techniques in Chemistry**

Total Duration : 2 Hrs. 30 Mins.                    Total Marks : 60

## Section B

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

1. How will you compare the results by using student's t – test and Q – test.

2. Discuss the principle and factors affecting of thermometric titration.

3. i) Explain Koopman's theorem.
   ii) Discuss the important application of PES.

4. Explain Separation of lanthanides and actinides using ion-exchange chromatography.

5. Discuss the application of Polarography.

6. Discuss the various components of TGA with a block diagram.

7. Explain the significance of atomisers in atomic absorption spectroscopy.

8. Describe the following paper chromatography
   i. Ascending                ii.Descending.

## Section C

### I - Answer any **TWO** questions  $(2 \times 10 = 20$ Marks)

9. (i) The following values were obtained for the determination of cadmium in a sample of dust 4.3, 4.1, 4.0 and 3.2µg/g. Should the value 3.2 be reject or retained ? (Qcritical=0.831)

   (ii) What are systematic and random errors? Explain                ( 4 + 6 )

10. Define half wave potentials. Explain the application of half wave potentials.

11. i) What are the factors affecting TGA and DTA curves
    ii) Explain principles and application of radio immune assay.

12. (i) Discuss the principle and applications of flurometry.
    (ii) Discuss the principle of nephelometry. Give its applications.

### II - Compulsory question  $(1 \times 10 = 10$ Marks)

13. Describe the theory and application of Capillary electrophoresis.

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