

M.Phil. –Chemistry [Semester – II]
Paper-I Research Methodology [50 Marks]

- (a) Literature Search and
(b) Instrumentation method based on

1. UV/Visible Spectroscopy, IR spectroscopy, Atomic Absorption spectroscopy, Emission spectroscopy; 10 articles on recent advances – Talanta, Analytical Chemistry, Chemical education etc.
2. Mass Spectrometry, Kinetic Methods, Electrochemical industries, Automation in Analytical Chemistry; 10 articles on recent advances - Talanta Analytical Chemistry, Chemical Education, etc.

References:-

Research Papers

1. Atomic absorption in clinical analysis.
Bio Chemical –vol. :13- PP -1989
2. Laser Excited Raman spectroscopy – Chemical Tech.-1982
3. Raman spectroscopy 20 years later – Chemical Tech. – 1990
4. Raman spectroscopy for Qualitative Multi component system International laboratory – 1984.
5. Cyclo dextrin enhanced luminescence Spectroscopy – International Laboratory – 1984 April
6. New developments in Spectrofluorometry.
-International laboratory -1984 April.
7. Simultaneous kinetic determination of Cu, Co& Ni by means of -C =N – group Interchange reaction – Talanta- vol. : 32- 1985 -PP -851-858.
8. Simultaneous Kinetic determination of Iron and Chromium at the nanogram level – Analytical Chemistry, Vol. : 56-1417-1422(1984)

9. Determination of metals by second harmonic alternating current voltametry with a semi stationary Ag-electrode, Talanta – vol. :32 – pp 539-543.
10. Catalytic titrations – Analyst, vol. :112, June 1987.
11. Monitoring of microgram / liter concentration of trace metals in sea water. The choice of methodology for sampling and analysis – Analyst Vol. :112, June 1987.
12. Differential pulse polarographic determination of iodide in common salt – Analyst, Vol. :113, July 1987.
13. A contribution to the problem of increasing the sensitivity of anodic stripping voltametry – Talanta – vol 19 pp – 1285-1293
14. Simultaneous determination of SO₂, NO₂ and NO in air by differential pulse polarography – Talanta – vol :26-PP-1011-1014.
15. Extreme trace analysis of elements in the state of the art today & tomorrow – Analyst – vol:112-April 1987
16. Rancidity and its measurements in edible oils and snack foods – A review – Analyst-vol 113-(Feb)1988
17. Measurements of Na & K in Clinical chemistry, a review – Analyst –vol. - 113-(March)1988.
18. Enzymes as analytical reagents, substrate definition with soluble and with immobilized enzyme preparation – Analyst – vol :112 pp 719-727 June 1989

Reference Books:

1. Physical methods in chemistry – By R.S.Drago.,
2. Fundamentals of molecular spectroscopy -By C.N.Banwell [Mc Graw – Hill]
3. Principles of Instrumental analysis-By Skoog and West (1980)
4. Thermal methods of analysis-By W.W.Wendlandt Interscience, New York