Roll No. ..... **Total No. of Pages : 2**

PC 13097-N

L-3/2111

ANALYTICAL CHEMISTRY—301

Semester—III

Time Allowed : 3 Hours] [Maximum Marks : 55

Note :— The candidates are required to attempt ***two*** questions each from Sections A and B. Section C will be compulsory.

SECTION—A

I. (a) Describe various steps in quantitative analysis. 4

(b) What is criterion of a good sampling plan ? 4

II. (a) Give classification of errors. Describe the methods of minimisation of errors. 5

(b) What is stratified sampling ? 3

III. What is principle of polarography ? Derive Ilkovic equation and discuss deviations also. 8

IV. Explain theory, circuit and applications of chronopotentiometry. 8

SECTION—B

V. What do you understand by thermogravimetric analysis ? Discuss factors affecting the thermogravimetric analysis. 8½

VI. Write notes on :

(a) Beer's law and deviation from Beer's law 4

(b) Photometric accuracy. 4½

VII. Explain methods of solvent extraction and their applications in analytical chemistry. 8½

VIII. Explain ion exchange chromatography and its applications. 8½

SECTION—C

IX. (a) Differentiate accuracy and precision.

(b) What do you mean by alternating current ?

(c) What is residual current ?

(d) Discuss use of mixed solvents in ion exchange resins.

(e) What do you mean by synergistic extraction ?

(f) Define tensiometry.

(g) What is linear regression ?

(h) What are various methods of quantitative analysis ?

(i) How can we improve accuracy of analysis ?

(j) What is theory of spectrophotometry ?

(k) What are advantages and disadvantages of DME ? 11×2=22