KJ-457

M.Sc. (Chemistry)

3rd Semester Examination, June, 2020

Paper - IV

Analytical Techniques and
Data Analysis

Time : Three Hours] [*Maximum Marks* : 80

Note : Answer **all** questions. The figures in the right-hand margin incidate marks.

Unit-I

1. (*a*) What do you mean by sampling statistics ? Discuss. 8

(*b*) What is errors ? Explain the types of errors. 6

(*c*) Explain accuracy. 6

OR

(*a*) Discuss the different sampling techniques. 8

(*b*) How will you minimize the errors ? Describe the methods. 6

(*c*) What is F-test ? Explain with example. 6

Unit-II

2. (*a*) Write the application of paper chromatography in structure analysis. 8

(*b*) Describe the various detectors used in HPTLC. 6

(*c*) Write classification of chromatographic techniques. 6

OR

(*a*) Explain column chromatography. 8

(*b*) Write the separation method for carbohydrates by TLC technique. 6

(*c*) Discuss the various techniques of develop chromatogram. 6

Unit-III

3. (*a*) Discuss the main components of thermobalance. 6

(*b*) Explain the centrifugal analyzers. 8

(*c*) Describe the thermogravimetric curve. 6

OR

(*a*) Discuss the factors affecting differential scanning calorimetry (OSC). 6

(*b*) Write a note on flow injection analysis. 8

(*c*) Describe the kinetic studies of thermal gravimetric analysis. 6

Unit-IV

4. (*a*) Explain the fundamentals of potentiometry. 6

(*b*) Discuss half wave potential. 8

(*c*) Write note on dropping mercury electrode. 6

OR

(*a*) Explain instrumentation for pH metry. 6

(*b*) Discuss the principle and application of stripping voltametry in trace metal analysis. 8

(*c*) Write the advantages and disadvantages of amperometric titrations. 6

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