
NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF APPLIED CHEMISTRY
END OF SEMESTER EXAMINATIONS – DECEMBER 2001
ANALYTICAL CHEMISTRY III – SCH 4106 4.2.06
TIME – (2 ½) TWO AND HALF HOURS

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions.

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SECTION A

1. As research and industrial problems have become more, there is a new acceptance of developing Analytical Designs.

Explain with the aid of a Flow Chart that suggests the progression of steps that may be taken in developing an Analytical Design.

(25 marks)

2. Explain in detail the term "*Quality is Applied to Measurements to Mean Reliability*".

(25 marks)

3. Draw a tabulation of representative sources of error in Mass Spectrometry and in Gas Chromatograph.

(25 marks)

4. A Single Point Calibration Method is employed in a spectrometric determination of Ni^{2+} ions. For a $1.53 \times 10^{-1} \text{ M Ni}^{2+}$ standard an absorbance of 0,578 is obtained at the selected wavelength.
 - (a) What is the molar absorptivity?
 - (b) Write the equation for a Calibration Curve based on this point.
 - (c) The curve is used to determine the concentration of Ni^{2+} unknown for which $A = 0,318$. Calculate the concentration.

(25 marks)

END OF QUESTION PAPER!!!!