

**Chapter 1 :** this chapter gave me a basic understanding of Achem and importance industries like pharmaceutical, environmental science and food safety. i learned about the difference between qualitative and quantitative analysis, which is essential for identifying and measuring substances. understanding accuracy, precision and errors help me realize how small mistakes can affect experimental results.

**Chapter 2 :** this chapter focused on how to handle experimental data and the importance of statistical tools in analysis. There's different types of errors such as systematic and random errors. i also learn the concept of mean, standard deviation and confidence intervals is useful in understanding how reliable data is.

**Chapter 3:** gravimetric analysis is a quantitative technique where the amount of analyte is determined by measuring its mass. this chapter taught me about precipitation and volatilization methods, which are important. i found it interesting how carefully filtering and weighing precipitates can lead to highly accurate results. however, i also realized that errors in weighing or drying sample can significantly affect the final outcome.

**Chapter 4:** spectrochemical methods use light to analyze substance, which i found very fascinating. this chapter explains different types of spectroscopy, such as atomic and molecular spectroscopy. i learned how lights interact with matter and how this interaction can be used to identify and quantify substances. this chapter shows how important spectroscopic techniques are widely used in chemical analysis.

**Chapter 5:** this chapter explained different molecular spectroscopy techniques like UV-VIS, IR and fluorescence spectroscopy. i found it interesting how molecules absorb specific wavelength of light which provide information about their structure. learning about Beer's law and how absorbance relate to concentration made me see how important spectroscopy for quantitative analysis.

**Chapter 6:** this chapter focused on atomic absorption (AAS), atomic emission (AES) and atomic fluorescence spectroscopy (AFS). i learned how these techniques help detect and measure elements metal in different sample. it was interesting to see how different energy sources, like flames and plasmas, excite atoms and produce unique spectra. this chapter show how important atomic spectroscopy is in field like environmental testing medicine. (my favourite chapter)

**Chapter 7 :** chromatography is a separation technique used to analyze complex mixtures and this chapter covered different type such as gas chromatography (GC) and liquid chromatography (LC). i learned how the interaction between the mobile and stationary phases helps separate substances based on their properties. chromatography is used in drug testing, food safety and forensic science.

**Chapter 8 :** this chapter focused specifically on gas chromatography where gases act as the mobile phase to separate mobile phase to volatile compounds. i learned about the different components of GC system, including the injector, column and detector. GC is widely used in analyzing environmental pollutants, drug compound and industrial chemicals. understanding the importance of column selection and temperature control is crucial in GC analysis.

**Chapter 9 :** HPLC (high performance liquid chromatography) is a technique used for separating and analyzing compounds in liquid form. i learn about the components of HPLC system including pump, column and detector. compared to traditional liquid chromatography, HPLC offers higher efficiency and faster analysis. this chapter helped me understand why HPLC is widely used in biochemical research and pharmaceutical.

HPLC