جامعه المستقبل
كليه العلوم
قسم الكيمياء الحياتيه

اعداد : م ايلاف علي عبيد

اسم الماده : الكيمياء التحليليه

Introduction :

Analytical chemistry is branch of chemistry that deals with the analysis of different substances and it involves the separation, identification, and the quantification of matter. by using of classical methods along with modern scientific instruments to achieve all ese purposes.

 Analytical chemistry divided to

Qualitative analysis which deals with the identification of elements, ions, or compounds present in a sample (tells us what chemicals are present in a sample).

Quantitative analysis which is dealing with the determination of how much of one or more component is present (tells how much amounts of chemicals are present in a sample). This analysis can be divided into three branches.

Chemical analysis method:

Volumetric analysis (Titrimetric analysis): The analyte reacts with a measured volume of reagent of know. concentration, in a process called titration.

Gravimetric analysis: usually involves the selective separation of the analyte by precipitation, followed mass(of the precipitate).

Instrumental analysis: They are based on the measurement of a physical property of the sample, for example, an electrical property or the absorption of electromagnetic radiations Examples are spectrophotometry (ultraviolet, visible, or infrared), mass spectrome: 3, nuclear magnetic resonance spectrometry (NMR), X-ray spectroscopy.

Solution: Homogeneous mixture of two or more substance produce from dissolved (disappeared) solute particle (ions, atoms, molecules) (lesser amount) between solvent particle (larger amount).

Solvent (larger amount) + Solute (lesser amount) = Solution

Concentrated Solution: has a large amount of solute. Dilute Solution: has a small amount of iute. Not radioactive

Unsaturated solations: if the amount of solute dissolved is less than the solubility limit, or the amount of solute is less than capacity of solvent.

Saturated Solution: is one in which no more solute can dissolve in a given amount of solvent at a given temperature, or if the amount of solute equal to capacity of solvent.