**Lab sheet #8**

**-Beer's- Lambert Law and Standard Curves –**

**Objectives:**

* To understand the concept of Beer-Lambert law and its application.
* Getting familiar with standard curve.
* Determination of an unknown concentration for a solution.

**Method:**

* You are provided by:
1. Standard solution (Stock solution) of **Copper Sulfate with 0.1 M** [known concentration].
2. Solution with **Unknown concentration "A".**
3. Solution with **Unknown concentration "B".**
* Set up 8 test tubes, as following table:

|  |  |  |  |
| --- | --- | --- | --- |
| **Tube** | **0.1M Copper Sulfate Standard Solution (ml)** | **Distal water (ml)** | **Solutions with unknown concentration (ml)**  |
| **Blank** | **-** | 10 ml | - |
|  **A** | 2ml | 8ml | - |
|  **B** | 4ml | 6ml | - |
|  **C** | 6ml | 4ml | - |
|  **D** | 8ml | 2ml | - |
|  **E** | 10ml | - | - |
| **Solution "A"** | - | - | 3 ml |
| **Solution "B"** | - | - | 3 ml |

* Mix the contents using the vortex.
* Measure the absorbance of each tube at 600 nm against the blank [………..….].

**Results:**

|  |  |  |
| --- | --- | --- |
| **Tube** | **Absorbance at 600nm** | **Concentration (M)**C1 x V1 = C2 x V2 |
| **A** |  |  |
| **B** |  |  |
| **C** |  |  |
| **D** |  |  |
| **E** |  |  |
| **Solution "A"** |  | From the curve= |
| **Solution "B"** |  | From the curve= |

* Calculate the concentrations of the series of known standard solutions.
* Plot the standard curve (Absorbance vs. Concentration).
* Determine the concentration of Solution "A" and "B" using the graph and Beer’s- Lambert law.