**Lab sheet #1**

**-Preparation of Buffer Solutions-**

**Method and calculations:**

**A. Preparation of buffer:**

You are provided with **monosodium dihydrogen phosphate (NaH2PO4) and disodium hydrogen phosphate (Na2HPO4).**   
- phosphate buffer with concentration 0.25M and pH=7.4 , if you know that (pKa=7.2).

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Determine which is the weak acid and which is the conjugated base [its salt].

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🡺 Now take …………. g from NaH2PO4 and …….…. g from Na2HPO4 dissolve them in a volume of a distal water (less than 50 ml).

🡺 Check the pH, then complete the volume up to 50 ml by addition of distal water.

**B. Testing for buffering behaviour:**

1. In one beaker add 10 ml of 0.25M phosphate buffer that you have prepared, and in another beaker add 10 ml of KCl.

2. The pH of the contents of each beaker is measured. Then record the readings.

3. Add a specific amount of diluted hydrochloric acid to the contents of each beaker, stir both solutions thoroughly with a clean glass stirrer.

4.Re-measure the pH value. Record the results and observe the difference.

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| **Measured pH**  **value** | **2M HCl** | **Measured pH**  **value** | **Solution** |
|  | 0.1 ml |  | 0.25M phosphate buffer |
|  |  | 0.2M KCl. |

**Based on the previous results, answer the following questions:**

What are your observations regarding the pH values before and after adding the acid, and before and after adding the base for the buffer solution sample and the water sample?  
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What is your conclusion from the two experiments?

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