INQUIRY LAB A

DETERMINATION OF UNKNOWN MOLARITY

Note: It is not appropriate for you to look-up how to do this lab online or to use books other than your textbook/class notes. It is also not appropriate to consult the help of anyone who is not a member of your lab group.

Purpose:

What you are going to do? Determine the unknown molarity of a solution of sodium phosphate.
How are you going to do it? Well, that is the entire purpose of the lab, isn't it?

Theory:

You will be given a solution of sodium phosphate of unknown molarity. You will determine a plan using the equipment below that will allow you to reveal the molarity of the solution.

[**Note: You may not simply evaporate the water out of the solution and mass it!**]

Equipment/Materials Provided:

eudiometer tube	thermometer	crucibles	laboratory tongs
beaker tongs	beakers	test tube clamps	ring stand
metal ring	flasks	evaporating dish	well plates
rubber stoppers (solid)	rubber tubing	hose clamps	rubber stoppers (1 hole)
centrifuge	Test tubes	pipettes	pipetter
stirring rods	milligram balance	aspirator flask	Buchner funnel
filter paper	drying oven	mortar/pestle	graduated cylinders
scupula	spatula	Petri dishes	distilled water
burets	distillation column	separatory funnel	plastic funnels
0.200 M $CaCl_2$	0.200 M NaCl	0.200 M $Ba(NO_3)_2$	0.200 M KNO_3

Preparation Week:

You will be given this document one week prior to the week of 2/23/15 through 2/27/15 (LAB A). Take this time to get together with your lab partners and create a plan to address the problem outlined above.

Week 1 (2/23/15 through 2/27/15):

Report to 5206 this week for lab. Here you will present your tentative procedure to your instructor. You must also include a data table for all critical measurements and display how you will use them mathematically. This will be somewhat of a rough draft. ***Please TYPE the procedure for legibility.*** Do not write your finalized procedure for Week 2 in your lab notebook until it is completely done and completely vetted. In lab this week you will receive suggestions to better meet your goals and to fine-tune your procedure.

Week 2 (3/09 through 3/13):

Come to lab with a finalized and formal purpose, illustrated procedure and safety/physical data and a data table for your experiment. Perform your experiment. Find out the actual molarity of the sodium phosphate solution and finish your lab (conclusion, % Error, error analysis, post-lab questions).

Post Lab Questions:

1. If you were able to perform this lab again, what is the largest change you would make to your procedure? Justify your answer.
2. What equipment could you use to improve your experiment that was not available on the list? Justify your choice.
3. Do you think that you benefited from the opportunity of designing and performing this lab? Was it worth a 2 week commitment?