Exp. 9 Pre-Lab Quiz

Due Jan 31 at 1:59pm **Points** 5 **Questions** 11
Available until Jan 31 at 1:59pm **Time Limit** 45 Minutes

Instructions

This quiz will test the following concepts:

1. Iodometric titration calculations, *based on the Iodometric Titration Virtual Lab tutorial*
2. Techniques *(review the Lab Manual Technique sections 1, 2 and 3 or Chem 121 technique tutorials included with Exp. 9 in Canvas*)
   - Weighing by Differences
   - Preparing a standard solution
   - Titration

There is a 45 minutes time limit for this quiz and no multiple attempts are allowed.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	15 minutes	4.75 out of 5

Correct answers are hidden.

Score for this quiz: **4.75** out of 5
Submitted Jan 23 at 5:58pm
This attempt took 15 minutes.

Question 1 — 2 / 2 pts

You are performing an iodometric titration of ascorbic acid using a KIO_3 standard solution. Suppose that the amount of ascorbic acid in the sample you are about to titrate is 80 mg. Calculate the mass (g) of KIO_3 required to make 250.0 mL of the standard solution such that about 25 mL of it is used to completely react with the ascorbic acid present in the sample to be titrated.

The formula weight of ascorbic acid is 176.12 g/mol.

The formula weight of potassium iodate is 214.00 g/mol.

Keep 5 significant figures in your calculations. Provide your answer with **3 significant figures**.

DO NOT use the scientific notation.

Do not type in the “g”.

0.3241

Incorrect

Question 2

0 / 0.25 pts

A student needs about 1 gram of reagent B to prepare a standard solution. After loading a scoop onto the top loading balance they find that they have 2 grams of reagent B. What should the student do?

- (•) Place the two gram sample into the waste bucket and start over.
- ( ) Put the extra gram of reagent back into the bottle labeled "Reagent B".
- ( ) Remove about 1 gram of the sample into the waste bucket.
- ( ) Share half of the 2 gram sample with the next student.

Continue with the 2 grams of reagent B and double the size of the rest of the experiment.

Question 3

0.25 / 0.25 pts

The doors on an enclosed balance are only for loading the sample and have no influence on the results of weighing the sample.

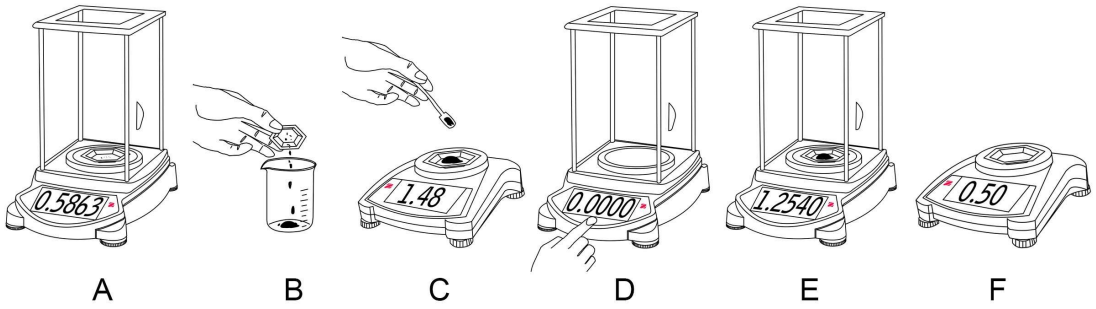
True

False

Question 4

0.5 / 0.5 pts

Referring to the process of weighing by differences choose an appropriate caption for each figure (A through F).

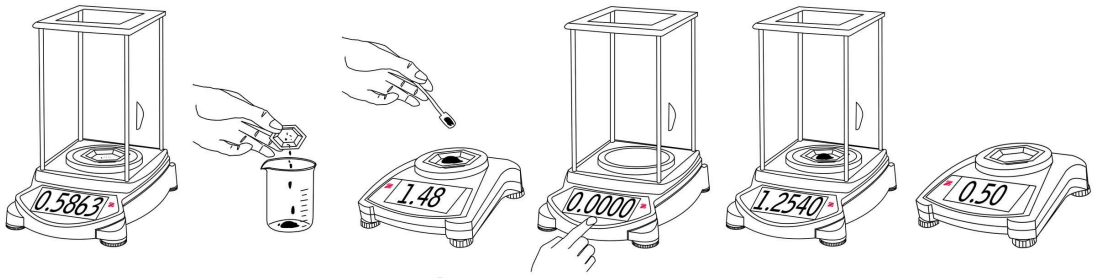


A	Weigh empty weigh boat ▼
B	Transfer the sample into a ▼
C	Weigh sample on top loac ▼
D	Tare analytical balance ▼
E	Weigh the sample in the v ▼
F	Weigh empty weigh boat ▼

Question 5

0.5 / 0.5 pts

Referring to the previous question, which of the following sequences of pictures best describes the process of “weighing by differences”?



- A - C – B – D – A
- D – A – E – B – A
- C – D – E– B – A
- F - C – B – D – A

Question 6

0.25 / 0.25 pts

Which of the following represents the calculation one must perform to find the mass of sample in weighing by differences? A through F are the balance readings in the picture in the previous question.

- E – A
- E – F
- C – A
- C – F

Question 7

0.25 / 0.25 pts

If you overshoot the calibration line when filling the volumetric flask with water, you must:

- Mix the solution thoroughly and then remove the extra water.
- Prepare a fresh standard solution.
- Remove the extra water with a Pasteur pipet and mix the solution thoroughly.
- Add more of the solute.

Question 8

0.25 / 0.25 pts

Some steps in the titration procedure require rinsing the glassware with the solution that it will contain. In other steps this practice would introduce an error. By referring to the titration calculations, consider whether the following is a good practice, or an error.

A clean pipet is used to transfer 25.00mL of the sample. If it is wet with water, do you have to rinse it with the sample solution before using it?

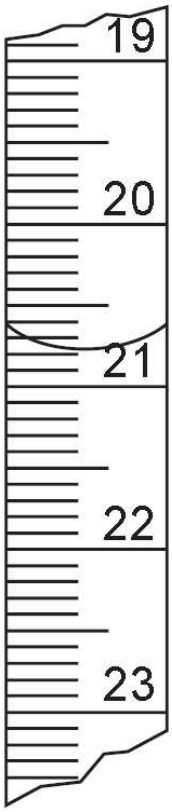
- [ ] No, because the water will not change the number of moles of the sample that react with the titrant.
- [x] Yes, because the water will change the sample concentration before reaction with the titrant.
- [ ] No, because it is only important to know the number of moles of the sample that react, and this can be calculated from the volume of titrant.

Yes, because the water will change the sample volume before reaction with the titrant.

Question 9

0.25 / 0.25 pts

What is the proper reading of the liquid level in the below picture of a buret?



20.78

Question 10

0.25 / 0.25 pts

The following pictures show 3 students' flasks at the end of a titration experiment. Student A's flask is on the left, Student B in the middle and

Student C's flask on the right. The titration used an indicator that turns pink at the endpoint. Which student performed the experiment best?

- I don't know, the information is not sufficient.
- (•) Student B, flask stayed barely pink.
- Student A, flask turned pink and then the color disappeared after a couple of seconds.
- Student C, flask is obviously pink.

Question 11

0.25 / 0.25 pts

What should you do if you want to do something different than the experimental plan you had written out in your Experimental Design?

- Erase the original plan from your Experimental Design and write in your new experimental plan.
- You should never deviate from your original experimental plan.
- (•) Cross out the original experimental plan with a single line and write in what you actually did during the experiment.

You should perform both the original and new experimental plans for comparison.

Quiz Score: **4.75** out of 5