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Tuesday Lab

August 20, 2023

Bio 125

LAB 1: Physiological Instruments

During this lab, my partner and I were introduced to a variety of different instruments we were going to be using for the lab assignment. We had access to one beaker, 1 graduated cylinder, 1 ruler of 12", 3 test tubes, and 3 petri dishes, 1 tweezer, and water (5 deg. celsius, 25 deg. celcius, and 45 deg. celcius). We also had access to potassium permanganate.

First, we read through the introduction and the lab objectives and procedures to make sure we were on the right track. After reading through the introduction, objectives, and procedures, we began to record every measurement that the lab book told us to take.

We read the section titled "1-B: Units of measure" and familiarize ourselves with the fundamental units of the metric system. With the information that we obtained from the "units of measure", we were able to quickly gather data from when the time came for us to measure. We started off with the basics and measured the length, width and depth of our lab book.

What we recorded was this:

Length of lecture text: 275mm = 27.5cm

Width of lecture text: 215mm = 21.5cm

Depth of lecture text:7mm = .07 cm

We recorded the weight of our pen and we got... 10920mg = 10.92 =g

We also recorded the weight of water in the beaker... 25136mg = 251.36g

After taking weight measurements, we moved on to measure pH of 3 different liquids. To prepare for this, we used the three petri dishes and poured a solution found in bottle "A", on the second dish we poured the solution out of bottle "B" and for the third dish we poured the solution from bottle "C".

Dish 1: measured 4ph

Dish 2: measured 7ph

Dish 3: measured 9pH

My partner and I continued to work through the lab book. We recorded our heart rate/time(s). our pulse after 15 sec. was: 1.13 beats/second. We converted that to 64 beats/minute which is also equal to 1.07 beats/second and .00107 beats/millisecond.

We recorded our data that came from the given fact that a table measures 2.9 meters.
We converted that to centimeters and what we concluded was that it measures 290 cm. We converted that answer into millimeters and got 2,900 millimeters.

Converting measurements was part of the lab as well. What we were converting this time was a cup holding 800ml worth of milkshake. In liters, that measures to 0.8 liters.
The milkshake weighed 463 mg... we converted that into grams and got: 0.463g. We recorded our data on a straw's length. The straw was said to measure 26cm. We converted the 26cm into meters and millimeters and what we got for those answers was this:

Straw length in meters: 0.26 meters

straw length in millimeters: 260 millimeters

Based on our understanding of the metric system and how to determine pH levels, we were able to determine the acidity of the milkshake. The milkshake reads a pH level of 10 which comes

out to be a BASIC level which means that the milkshake is at a desired pH level because an acidic liquid reads from 0-6 pH level.

We were also given an average recording of a 16 year old. We were told that the 16 year old can consume the milkshake in 840,000 msec.

We took that information and were able to convert that into seconds and minutes.

How long in seconds? 840 seconds

How long in minutes? 14 minutes

We proceeded to a different portion of the lab. What we did to prepare for this part was we took the 3 petri dishes and added 40 ml of room temperature water. We then proceeded to drop about 1 crystal of potassium permanganate into each dish. (Water temp. measured at 25 deg. celcius).

We had to wait about 5 minutes and after those 5 minutes we were to record the largest diameter that was formed by dropping the potassium permanganate (WE REPEATED THIS PROCESS 3 TIMES WITH DIFFERENT TEMPERATURE WATERS).

The second time around, we had filled the dishes with 5 deg. celsius water and dropped 1 drop of the potassium permanganate into the dishes. After waiting the 5 minutes again, we recorded the diameter of the largest stain that was formed in the water by the potassium permanganate.

We repeated this process one more time with water that measured at 45 deg. celcius.

The measurements recorded for each water type were as follows:

potassium permanganate water stain

water at 5 deg. celcius: 13mm diameter

water at 25 deg. celcius: 40 mm diameter

water at 45 deg. celcius: 26 mm diameter

We concluded that each temperature had an effect on the amount of diffusion activity going on when the potassium permanganate is dropped into the water.