Water Quality Lab

Purpose: To analyze water quality of unknown samples using common chemical indicators.

Hypothesis:

Materials:

* 4 test tubes and stoppers per one water sample
* Water samples
* Distilled water
* Nitrate test kit
* Phosphate test kit
* Turbidity test kit
* Dissolved oxygen test kit
* pH test (universal indicator)

Safety:

* Do not eat the tablets
* Do not drink any of the water samples

Procedure:

1. Fill the test tube with a water sample to the 5mL line
2. Conduct the pH, nitrate, phosphate, turbidity, and dissolved oxygen tests. Follow directions on the kits.
3. Record your findings on the observation table
4. Discard test water into the sink and then use tap water to rinse the test tube.

Observations:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Water Sample | pH | Nitrate Concentration  (ppm) | Phosphate Concentration (ppm) | Turbidity  (\_\_\_\_\_\_\_\_) | Dissolved Oxygen  (\_\_\_\_\_\_\_\_\_) |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| Distilled water |  |  |  |  |  |

Analysis:

1. Which water sample had the greatest concentration of nitrate? Explain why the sample may have a large concentration of nitrate?
2. Which water sample had the greatest concentration of phosphate? Explain why the sample may have a large concentration of phosphate?
3. Which water sample had the greatest turbidity? Explain why the sample may be the most turbid? What does turbidity indicate about the water sample?
4. Which water sample had the greatest concentration of dissolved oxygen? Explain why the sample may have a large concentration of dissolved oxygen compare to the rest of the samples?
5. Which water sample has the best and the worst water quality? What indicator(s) did you use to determine your answer?

Use the following information to answer the next question.

The five water samples were obtained from various water sources:

* University of Calgary pond water
* Snow melt water
* Bow River water from May 30, 2012
* Three Sisters Creek water
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Based on the four tests that were conducted for all five samples, match the samples with the water source you think it came from. Explain your choice.

Conclusion: