**Name**_____

# SCH4U- 2-4I: Organic Chemistry Reaction Lab ( T/I: 18 marks)

## Experiment #1:Saturated or Unsaturated

**General Overview:** This lab involves adding bromine solution to two unknown samples and observing any chemical reactions that take place. Based on your observations, you should be able to determine your unknown sample contains a saturated or unsaturated organic compound.

**Equipment**:

- safety goggles
- lab coat
- protective gloves
- eyedropper
- test tubes (3)

**Materials:**

- unknown organic sample #1
- unknown organic sample #2
- bromine solution

**General Overview:** This lab involves adding bromine solution to two unknown samples and observing any chemical reactions that take place. Based on your observations, you should be able to determine your unknown sample contains a saturated or unsaturated organic compound.

**Procedure:**

1. Put on lab coat, goggles and gloves
2. Label 3 test tubes: water, unknown #1 and unknown #2
3. Under the fumehood, add 10 mL of water, unknown #1 and unknown #2 to their own test tubes
4. Add 4 drops of bromine water solution to each test tube.
5. Observe each tube over time for any changes, record your observations in the table below

Name_____

**Observations :**

1. Colour of bromine water solution:_____**ORANGE**_____

| | Colour of sample before adding bromine | Colour of sample after adding bromine |
|---|---|---|
| **Water** | clear | **ORANGE** |
| **Unknown #1** | **CLEAR** | **ORANGE** |
| **Unknown #2** | **CLEAR** | **CLEAR** |

## Experiment #2: Oxidation Reactions of Alcohols

**General Overview:**

This lab involves mixing an oxidizing agent with different alcohols and observing any chemical reactions that occur. Based on these reactions you should be able to classify the different alcohols

**Equipment**

- labcoat
- gloves
- safety goggles
- eyedroppers (3)
- beakers (3)
- test tubes (3)
- test tube rack

**Materials**

- unknown sample #1
- unknown sample #2
- unknown sample #3
- potassium permanganate solution ($KMnO_4$)

**Prodecure:**

1. Put on lab coat, goggles and gloves
2. Place 3 test tubes in the test tube rack and label them #1, #2 and #3. Place the labeled test tubes under the fumehood
3. Put 4 drops of each unknown into their respective test tubes
4. Using the eye dropper, add 20 drops of potassium permanganate ($KMnO_4$) solution to each test tubestube
5. Observe each test tube for any changes over the course of 5 minutes
6. Record your observations below

**Observations:**

1.Colour of $KMnO_4$:_**PURPLE**

2. Qualitative observations:

| | Colour of sample before adding KMnO4 | Colour of sample 5 seconds after adding KMnO4 | Colour of sample 90 seconds after adding KMnO4 | Colour of sample 5 minutes after adding KMnO4 |
|---|---|---|---|---|
| **Unknown #1** | **CLEAR** | **CLEAR** | **CLEAR** | **CLEAR** |
| **Unknown #2** | **CLEAR** | **PURPLE** | **LIGHT PURPLE** | **CLEAR** |
| **Unknown #3** | **CLEAR** | **PURPLE** | **PURPLE** | **PURPLE** |