**Smells Lab Name:**

**Honors Chemistry Date: \_\_\_\_\_ Period:**

Record the smell of each of the following samples.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Compound** | **Name** | **Structural Formula** | **Molecular formula** | **Smell**  |
| **A** | **l-carvone** |  | **C10H14O1** |  |
| **B** | **phenylethylamine** |  | **C8H11N** |  |
| **C** | **pentyl propionate** |  | **C8H16O2** |  |
| **D** | **isopentyl acetate** |  | **C7H14O2** |  |
| **E** | **menthone** |  | **C10H18O2** |  |
| **F** | **ethyl acetate** |  | **C4H8O2** |  |
| **G** | **2-quinolinemethanethiol** |  | **C10H9NS** |  |
| **H** | **cadaverine** |  | **C5H14N2** |  |
| **I** | **putrescine** |  | **C4H12N2** |  |
| **J** | **hexanoic acid** |  | **C6H12O2** |  |
| **K** | **butyric acid** |  | **C4H8O2** |  |

**Post-Lab Questions**

1. Molecules can be grouped into one of the four main categories of smell: sweet, minty, putrid or fishy. Group the molecules in your lab by smell below, then go to your teacher to find out what they really are!

**Sweet**

|  |  |  |
| --- | --- | --- |
| Name | Molecular Formula | What is it really? |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

What common properties do you notice between the molecules that smell sweet?

**Putrid**

|  |  |  |
| --- | --- | --- |
| Name | Molecular Formula | What is it really? |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

What common properties do you notice between the molecules that smell putrid?

**Minty**

|  |  |  |
| --- | --- | --- |
| Name | Molecular Formula | What is it really? |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

What common properties do you notice between the molecules that smell minty?

**Fishy**

|  |  |  |
| --- | --- | --- |
| Name | Molecular Formula | What is it really? |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

What common properties do you notice between the molecules that smell fishy?

1. Build the molecule assigned to your lab group from your teacher. Sketch its structural formula. Draw in dipoles along each polar bond and indicate whether you expect the molecule overall to be polar or non-polar.
2. Would you expect the molecule discussed in #2 to dissolve in water? Why or why not?
3. Observe all of the models for the compounds in the lab. Sort the compounds into 2 groups – polar molecules and non-polar molecules.