Name _____ Mod ____ Student Number _____

Lab # _____ Bubbles, Drops, and Films

Purpose: A study of bubbles and films involves the phenomenon of SURFACE TENSION. This property of liquids is encountered in many ways and is understood by relatively few people. This lab will aid in increasing your understanding through careful observation and interpretation.

Materials: 2 medicine droppers, wax paper, 4 toothpicks, beaker, soap solution, test tube rack (1 per table), 10 ml. of oil, 2 test tubes, paper clip, petri dish, one cork with needle, metric ruler

Procedure: Part A

( )1. With a clean dropper, place several water droplets of different sizes on the wax paper. One droplet should be as small as possible, and the largest should be many times that size. Place various size droplets on other surfaces, such as a table top and a piece of paper towel, or the bottom of a dry petri dish.

( )2. Observe differences in the shapes of the drops, beginning with the smallest. MAKE SKETCHES and RECORD YOUR OBSERVATIONS. (Label each sketch, explaining what it is that you have drawn.)

( )3. Place two small drops of water on the wax paper as close to each other as possible. Determine how close the two drops must be to each other before they interact. RECORD this interaction. What happens to the two drops when they touch?

( )4. Touch some of the droplets with the top of a clean toothpick. Observe and record any change in appearance of the drops.

( )5. Dip the tip of a clean toothpick into the soap solution. Touch a water drop with this toothpick. Repeat this procedure several times with other drops. RECORD your observations.

Procedure: Part B

Carefully introduce a few drops of water into a test tube containing 10 ml. of oil. (See Fig. A) DESCRIBE the shape of these drops. Can you explain why they have this shape? What happens to these drops? Slowly squeeze the dropper until all the water has been forced into the oil. Do all the drops move at the same speed? RECORD your observations.

Procedure: Part C

( )1. Fill a petri dish 3/4 full of water. Using the paper clip, carefully place the needle ON the surface of the water. Note that the needle, if placed properly, "floats" on the water and not in the water. RECORD your observations. Can you explain what allows to the needle to "float?"

( )2. Place one drop of soap solution on the edge of the petri dish while the needle floats. RECORD AND EXPLAIN YOUR OBSERVATIONS.