Name _____

Date _____

Due Date _____

Mark _____/10

Correct and Hand in Again by _____

Chemistry 11
Experiment 16A-Polar & Non-Polar Solutes and Solvents

Purpose: To determine the effects of polar and non-polar solvents on ionic, polar covalent and non-polar covalent solutes.

Procedure: Follow the procedures for Part I and Part III on p. 164-165 of the Heath Lab Manual. Record the results in the following tables:

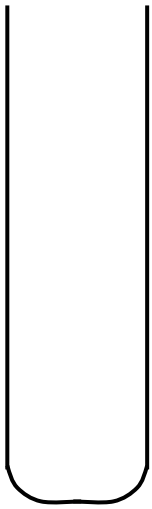
Table 1 – Known Solutes with Known Solvents

SOLVENTS	**SOLUTES**		
	Salt (NaCl) **IONIC**	**Sugar ($C_{12}H_{22}O_{11}$)** **POLAR COVALENT**	**Iodine (I_2)** **NON-POLAR COVALENT**
Water (Polar Covalent)			
Paint Thinner (Non-Polar Covalent)			

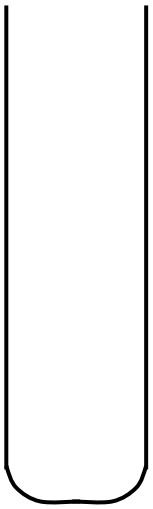
Table 3– Mixing Two Liquids

COMBINATIONS OF LIQUIDS	**COVALENT TYPES**	**RESULTS (Observations)**
Water & Paint Thinner	Polar and Non-Polar	
Water & Glycerin	Polar and Polar	

Sketches of Test Tubes with Mixtures of Liquids with Iodine



Test-tube with Paint Thinner, Water and a Crystal of Iodine



Test-tube with Glycerin, Water and a Crystal of Iodine

Questions:

Part 1:

1. **Polar covalent** solvents like _____ are good at dissolving _____ solutes like NaCl and **polar covalent** solutes like _____, but not good at dissolving _____ _____ solutes like _____.
2. **Non-polar covalent** solvents like _____ are good at dissolving **non-polar covalent** solutes like _____, but not good at dissolving **ionic** solutes like _____ or **polar covalent** solutes like _____.

Part 2:

3. Define **miscible** (look it up) –

4. Define **immiscible** –

4. **Water** (polar covalent) and **paint thinner** (_____- polar covalent) are

   (*miscible/immiscible*) _____

5. **Water** (polar covalent) and **glycerin** (_____ covalent) are

   (*miscible/immiscible*) _____

6. To summarize all the observations, **LIKE** dissolves ___ ___ ___ ___. (*one word, 4 letters*)

7. **Explain** why water is effective at dissolving ionic compounds like NaCl. Give a ***full explanation*** with a **diagram**! (See pages 209-210) of the Student Workbook)