Name: _____ Date: _____

Solvatochromism (Sek. II/supper secondary level)

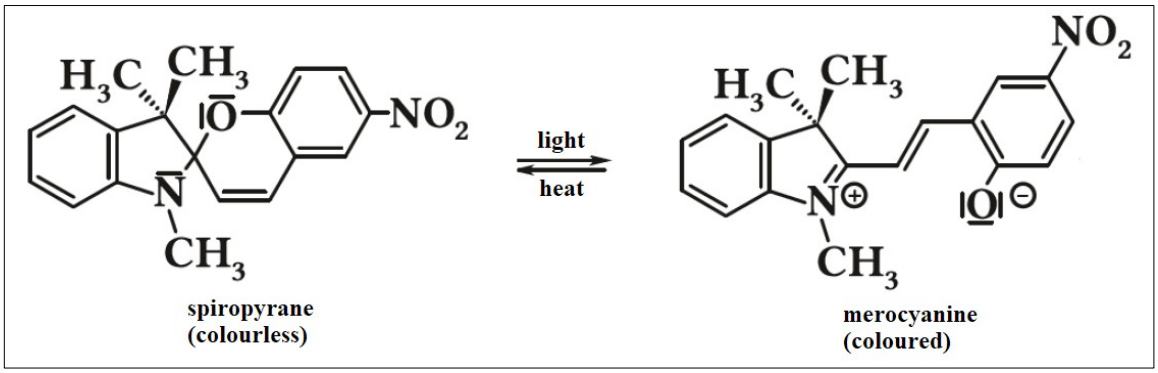
The solutions of the same substance in different solvents differ in colour

<u>Basic experiment and analysis assignments (A1-A3) for all groups</u>

Experiment: Dissolve 5 mg of spiropyrane in three different test tubes in 5 mL of xylene (or n-heptane), acetone, and ethanol, respectively. Irradiate each of the three solutions with the violet LED torch for one minute. Note down all your observations and store the samples in a dark place.

A1 Write down the structural formulae of the three solvent molecules and compare their chemical polarities. Justify your findings with the appropriate chemical terminology.

A2 Identify the differences between the two molecules spiropyrane and merocyanine. Use the following attributes and explain your decisions: molecular formula, chemical polarity, length of chromophore, molecule's planarity.



A3 Develop a hypothesis for the explanation of the different colours of the three solutions.