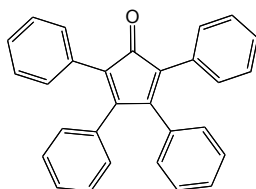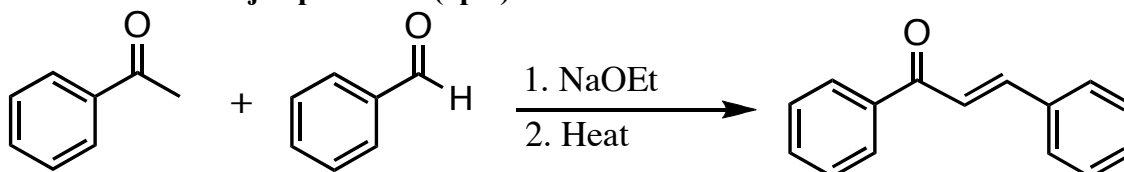NAME: Answer Key
TA: Robert
Section: 1E

Quiz #4

1. **Draw the product of today's experiment (1,2,3,4-tetraphenyl-1,3-cyclopentadieone). (2pts)**

2. **Provide the major product: (4pts)**

3. **What is wrong with the following TLC plates? (6pts)**
   The 1st plate has tailing b/c too much substance was spotted on the plate. Therefore, it is unknown if the reaction is complete. The 2nd plate has a mobile phase with that is too strong of an eluent. All the spots are at the top and cannot be separated. Probably the solvent was too polar. The 3rd plate shows an incomplete reaction because the 3rd lane has all three substances present.

4. **Given the following data for solubility of crude product in water:**

Temperature	Solubility (g/100ml)
0°C	3.0
20°C	10.0
40°C	22.0
60°C	44.0
90°C	120.0

   a. **How much water would be required to dissolve 60.0 g of crude product at 90°C? (2pts)**
      60.0 g * (100 mL / 120 g) = 50 mL

   b. **How many grams of pure product would be recovered if the solution is cooled to 0°C afterwards? (2pts)**
      50 mL * (3 g / 100 mL) = 1.5 g
      60.0 g – 1.5 g = 58.5 g

5. **Given the molar coefficient of a given compound is 2700 L*mol^{-1}*cm^{-1}, what is a suggested concentration for this compound to do a UV-VIS measurement? (4pts)**
   A = εlc and 0.6 < A > 1.0; therefore concentration can equal less than 3.7 x 10^{-4} M.