1) **Lab Technique:** The melting point of a pure compound is known to be 98-100°C. If the compound were contaminated with an impurity you would not expect the melting point to be:

   a) 87-98°C  
   b) 91-112°C  
   c) 99-101°C  
   d) 92-100°C  
   e) 75-90°C

2) **Calculation:** Calculate the following for the Wittig Reaction based on the NMR provided.

   A) Percent Conversion

   B) % of E alkenes
3) **Mechanism:** Provide the mechanism for the Wittig Reaction below:

![Wittig Reaction Diagram]

4) **Theory:** For this week’s experiment, your group is responsible for designing a Wittig reaction. This experiment must be able to test how varying a particular factor in the Wittig reaction affects product stereospecificity. The E:Z stereoisomer ratio of products and percent conversion will be examined by NMR analysis of the product.
   a. What are the factors you can manipulate in this experiment?
   b. How will these factors affect the E:Z stereoisomer ratio and/or percent conversion?
5) **Safety:** During an extraction, what do you do to remove solvent from the product?
   a. Use a hot plate to evaporate the remaining solvent away.
   b. Use a gentle stream of air to evaporate the remaining solvent away.
   c. Decant the solvent into an empty beaker and pour it down the drain.
   d. Any of the above.
   e. None of the above.

6) **Calculation:** Consider the Wittig reaction of p-anisaldehyde with excess benzyltriphenylphosphonium chloride in base to make (Z)-p-methoxystilbene.

A reaction was performed in which 0.600 mL of p-anisaldehyde was reacted with a slight excess of benzyltriphenylphosphonium chloride to make 0.803 g of p-methoxystilbene. Calculate the theoretical and percent yield for this reaction.