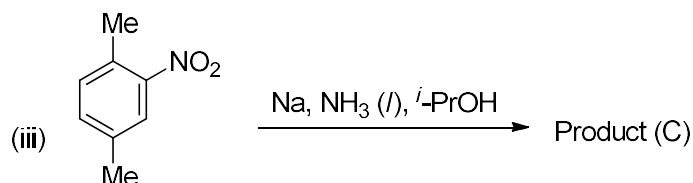
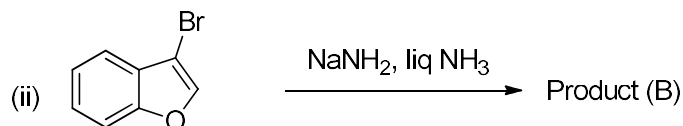
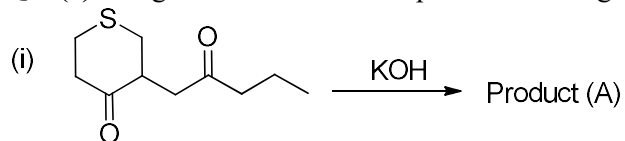
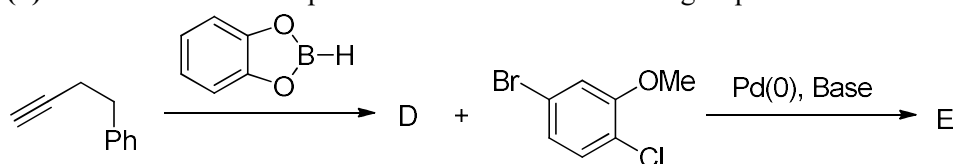


NOTE: Write answer of all parts of a question at one place.

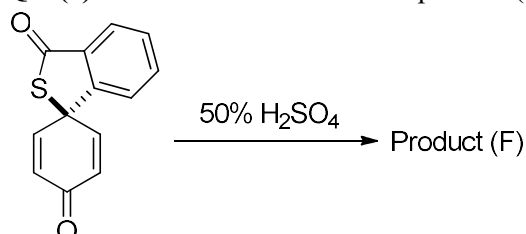
Q1. (a) Assign the structure of the product for the given transformations? [2+2+2]



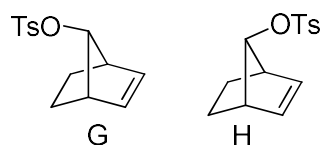
(b) Write the structure of product D and E in the following sequence of reaction? [2+2]



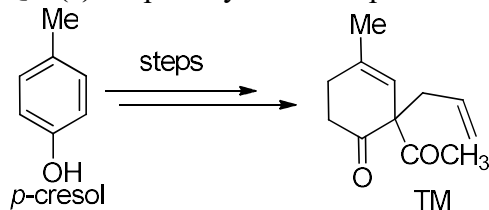
Q2. (a) Predict the structure of the product (F) and propose the mechanism for the given transformation? [2+3]



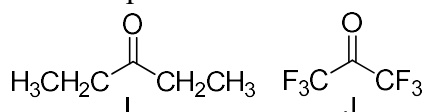
(b) Write the structure of products formed and explain the reactivity difference through intermediate structure when G & H reacts with Nu:? [2+3]



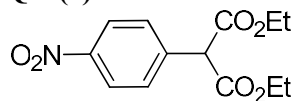
Q3. (a) Propose synthetic steps with reagent and conditions for TM from *p*-cresol (SM)? [6]



(b) What will be the major difference in the IR spectrum of aqueous solution of given compounds (I & J)? Give a brief explanation for both. [4]

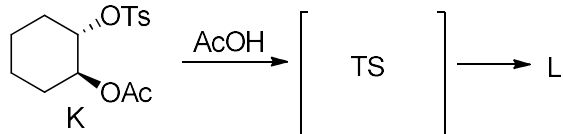


Q4. (a) Write suitable starting materials/reagents and reaction condition(s) to prepare the given compound? [4]

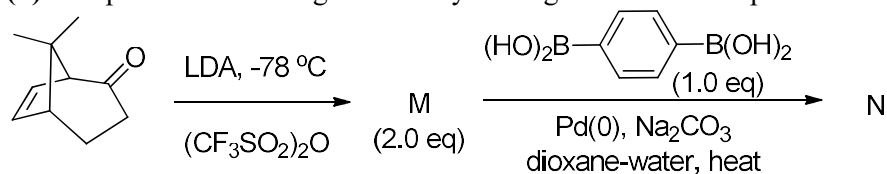


(b) What do you mean by Heck-coupling reaction? Write the mechanistic steps and justify the formation of stable *trans*-coupling product through the transition state model. [2+2+2]

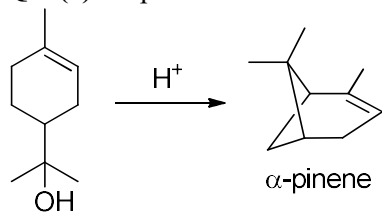
Q5. (a) Draw suitable transition state(s) and write the structure of product L for the given transformation. Comment on the optical activity of the product formed if starting material K is optically active. [2+2+2]



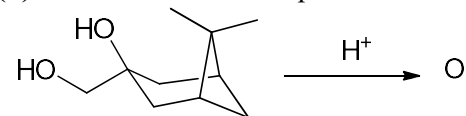
(b) Complete the following reaction by writing structure of the products M and N? [2+2M]



Q6. (a) Propose the reaction mechanism for the given transformation. [4]



(b) Write structure of the products O and P and propose the mechanism for their synthesis. [2+2+2]



*****GOOD LUCK*****