

國立臺灣師範大學 114 學年度碩士班招生考試試題

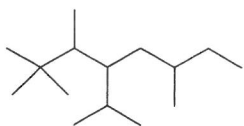
科目：有機化學

適用系所：化學系

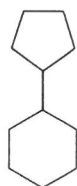
注意：1. 本試題共 3 頁，請依序在答案卷上作答，並標明題號，不必抄題。2. 答案必須寫在指定作答區內，否則依規定扣分。

1. Give IUPAC names of the following compounds: (10 points)

(A)



(B)



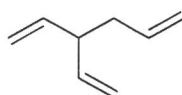
(C)



(D)



(E)



2. Draw structures corresponding to the following IUPAC names: (10 points)

(A) 2-methylpent-1-en-3-yne

(B) but-3-yn-2-ol

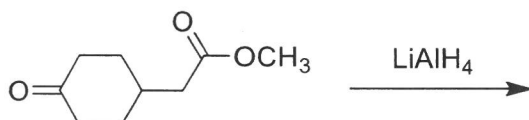
(C) *trans*-3-(2-hydroxyethyl)cyclopentanol

(D) 3-hydroxybutanoic acid

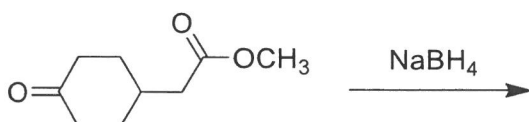
(E) 2-mercaptoethanol

3. Provide the structure of the expected product under each of the following reaction conditions. (8 points)

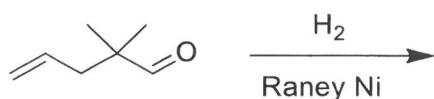
(A)



(B)



(C)

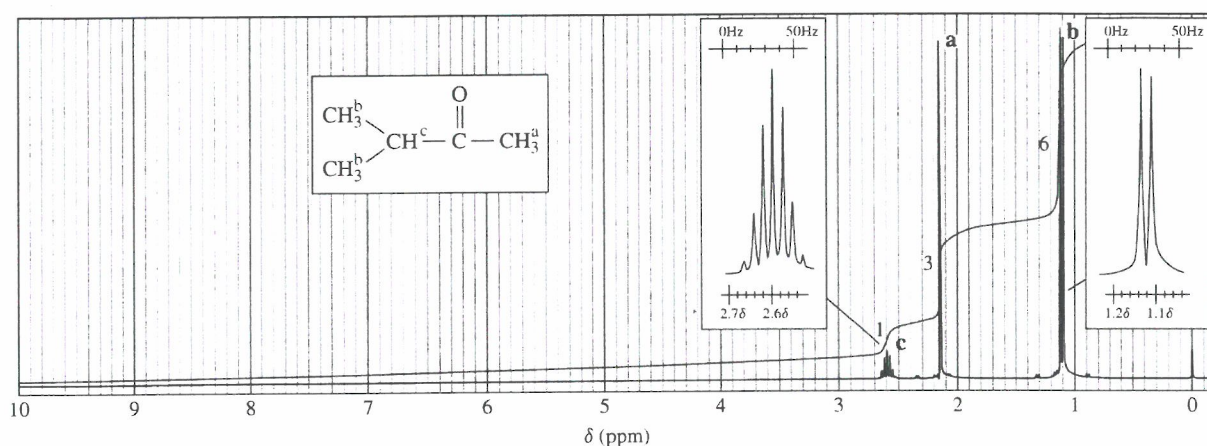


(D)

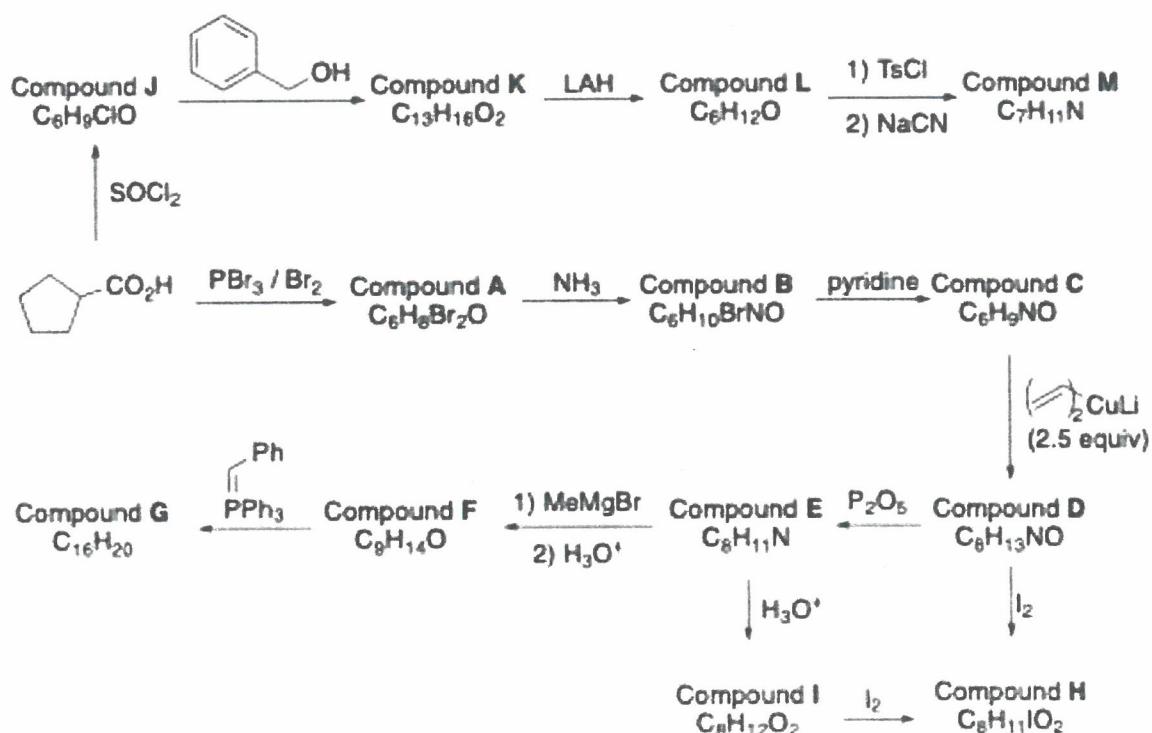


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4. (A) Please draw the most stable conformation of *cis*-1,4-di-*tert*-butylcyclohexane. (2 points)
- (B) Please draw the most stable conformations for *cis*- and *trans*-bicyclo[4.4.0]decanes respectively. (4 points)
5. Please use the following ^1H -NMR spectrum to explain why it belongs to methyl isopropyl ketone. (8 points)

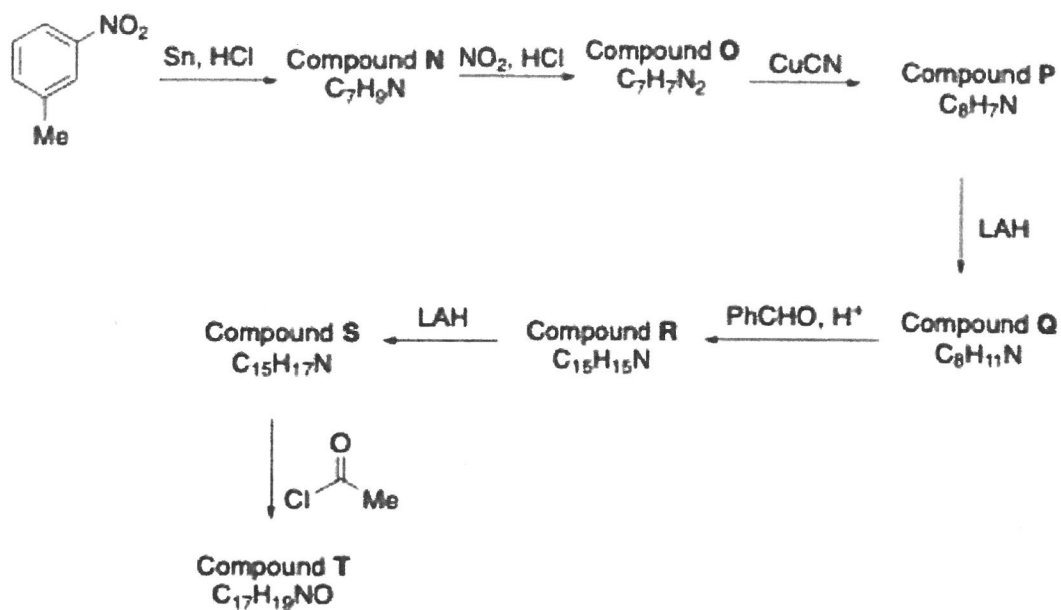


6. Determine the structures of compounds **A** through **M**, including stereochemistry where appropriate. (26 points)

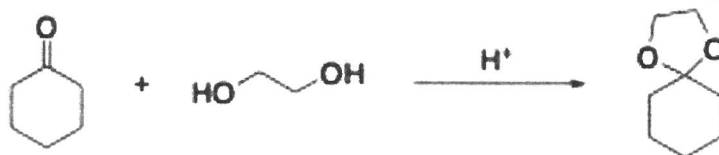


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7. Determine the structures of compounds N through T, including stereochemistry where appropriate. (14 points)



8. Provide a reasonable mechanism for the following transformation. (10 points)



9. Please propose the reaction mechanism: (8 points)

