

淡江大學九十二學年度碩士班招生考試試題

系列：化學學系

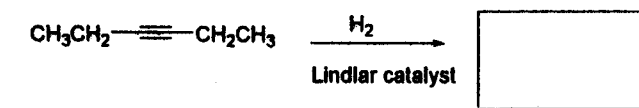
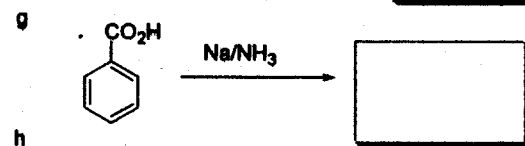
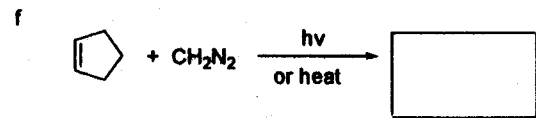
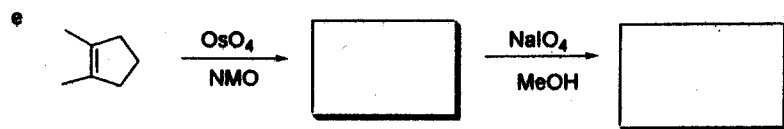
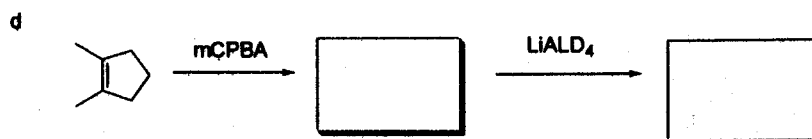
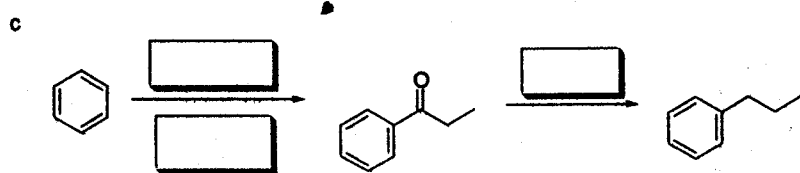
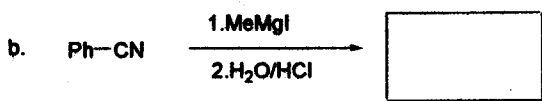
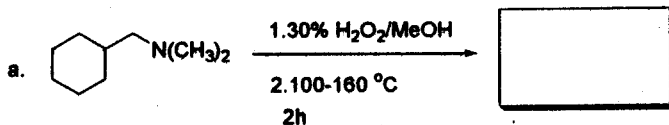
科目：有機化學

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本試題雙面印製

1. Provide the reagents or products in the indicated boxes. It is extremely important to indicate the relative stereochemistry if necessary. (36 pt)



◀ 注意背面尚有試題 ▶

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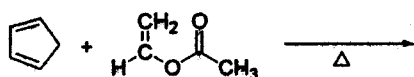
科目：有機化學

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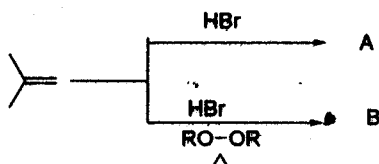
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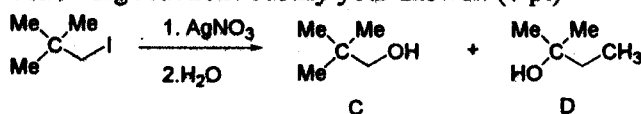
2. Indicate the major and minor products of the following reaction. Justify your answer. (8 pt)



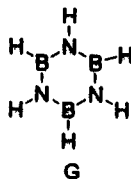
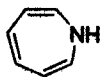
3. Predict the products (A and B) of the following reactions and justify your answer. (6 pt)



4. Which product (C or D) will you obtain in the major compound of the following reaction? Justify your answer. (8 pt)



5. How would you distinguish between 1-propanol and isopropanol by the  $^1\text{H}$  NMR spectra? Draw their structures and clearly indicate the splitting pattern of each proton as well as its rough chemical shift. (12 pt)
6. Classify the following compounds into chiral or achiral compounds. Draw their structures and justify your answers (6 pt)
- trans*-1,3-Dimethylcyclohexane
  - trans*-1,2-Dimethylcyclohexane
  - cis*-1-Isopropyl-4-methylcyclohexane
7. Which of the following heterocyclic compounds (E, F, and G) might be aromatic? Justify your answers (9 pt)



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8. Deduce the mechanisms of the following reactions (15 pt)

