

國立彰化師範大學 97 學年度碩士班招生考試試題

系所： 化學系碩士班

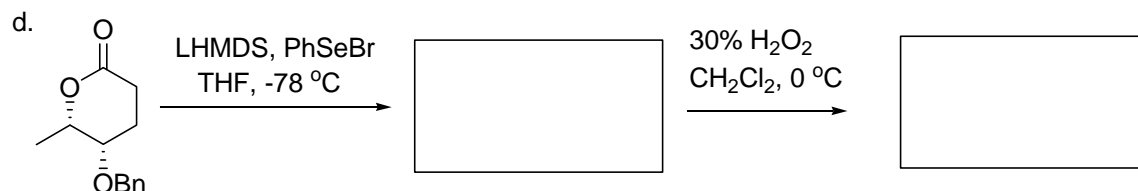
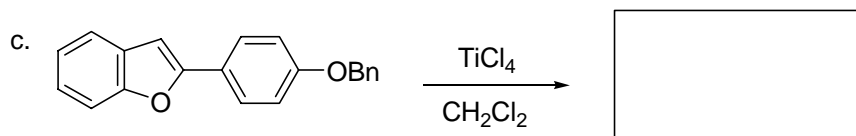
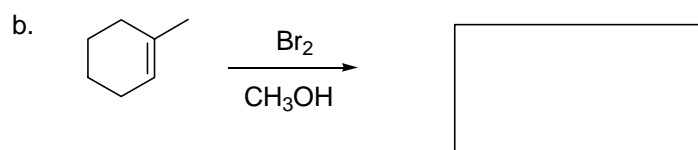
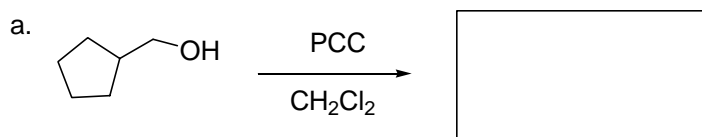
科目： 有機化學

☆☆請在答案紙上作答☆☆

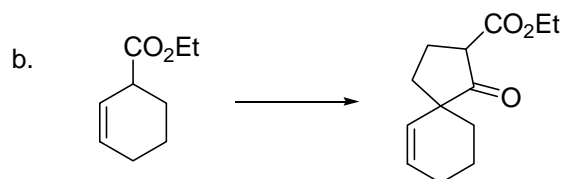
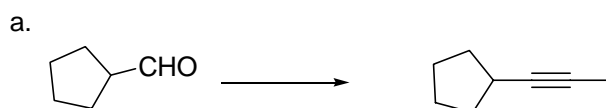
共 3 頁，第 1 頁

1. Write the structure of cyclohexanyltrimethylammonium iodide. (2%)

2. Give the structure of the product formed in each of the following reaction. (15%)



3. For each of the following provides a suitable synthesis. Show all intermediate products and all reagents. (10%)



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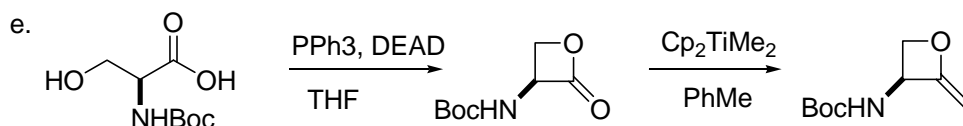
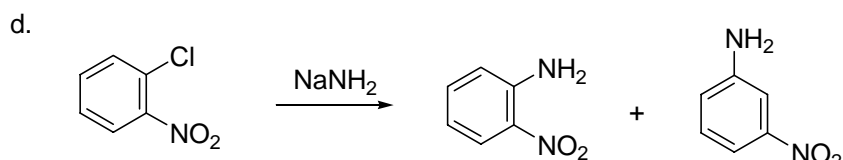
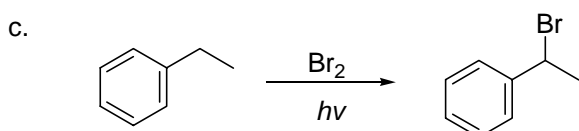
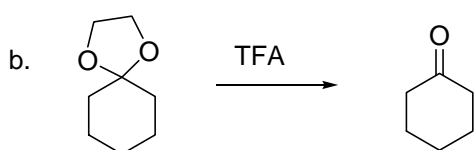
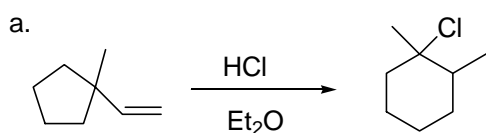
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共 3 頁，第 2 頁

4. Propose a mechanism for the following reactions. (20%)



5. Draw the structure of the following compounds from the ^1H NMR data. (12%)

a. $\text{C}_4\text{H}_8\text{Br}_2$ 1.97 ppm (singlet, 6 H), 3.89 ppm (singlet, 2H)

b. $\text{C}_8\text{H}_9\text{Br}$ 2.01 ppm (doublet, 3 H), 5.14 ppm (quartet, 1H), 7.35 ppm (broad singlet, 5H)

c. $\text{C}_5\text{H}_{10}\text{O}_2$ 1.15 ppm (triplet, 3 H), 1.25 ppm (triplet, 3H), 2.33 ppm (quartet, 2H), 4.13 ppm (quartet, 2H)

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共 3 頁，第 3 頁

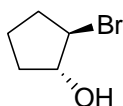
6. Give the named reaction of the following organic terms. (18%)

- Diels-Alder reaction
- Baeyer-Villiger oxidation
- Cope rearrangement
- Friedel-Crafts acylation
- Wittig reaction
- Swern oxidation

7. Draw the Haworth projection of D-glucose. (2%)

8. Provide the formula of glycine and alanine. (4%)

9. Indicate the configuration of the asymmetric carbons in the following molecule. (2%)



10. Give the reagents that would be required to carry out the following synthesis. (15%)

