

國立彰化師範大學 102 學年度碩士班招生考試試題

系所： 化學系

科目： 有機化學

☆☆請在答案紙上作答☆☆

共 2 頁，第 1 頁

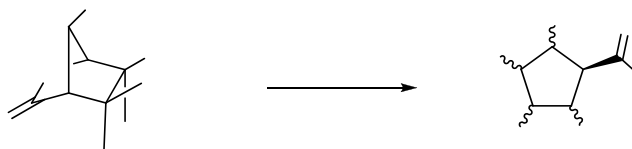
1. Draw structures corresponding to the names given. (12 %)

(1) (*R*)-3,5-Dihydroxy-3-methylpentanoic acid

(2) Aspirin

(3) Benzoyl bromide

2.

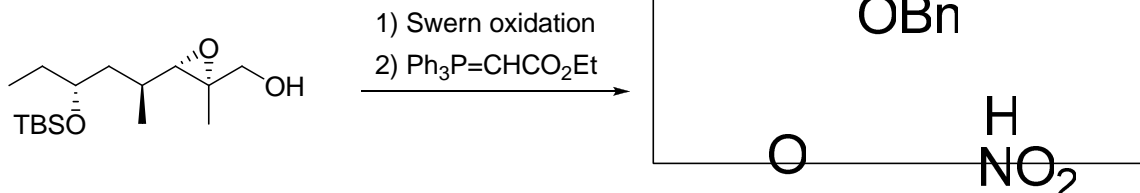


(1) $R_1 = \text{_____}$, $R_2 = \text{_____}$, $R_3 = \text{_____}$, $R_4 = \text{_____}$ (8 %)

(2) Draw the chemical structure of the product with proper stereochemistry. (8 %)

3. Draw the chemical structure of the product in the following reactions. (15 %)

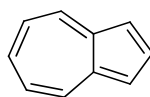
(1)



(2)



4. Azulene, an isomer of naphthalene, has a remarkably large dipole moment for a hydrocarbon ($\mu = 1.0 \text{ D}$). Explain, using resonance structures. (7 %)



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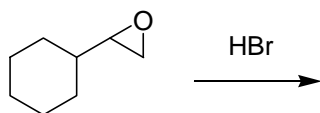
科目：有機化學

☆☆請在答案紙上作答☆☆

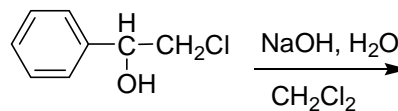
共 2 頁，第 2 頁

5. Please predict the product(s) of the following reactions (21%)

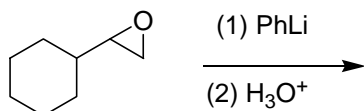
(1)



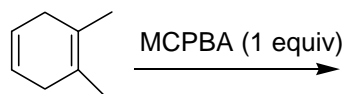
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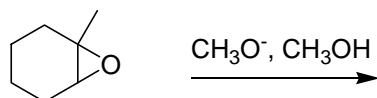
(2)



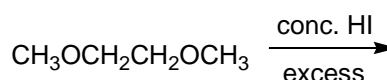
(6)



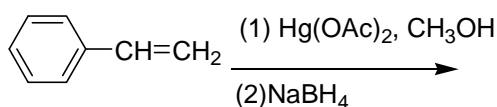
(3)



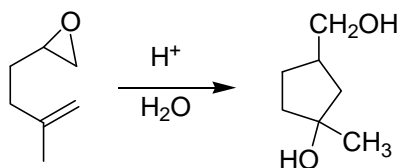
(7)



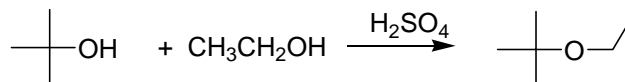
(4)



6. Propose a mechanism for the following reaction? (10%)



7. Propose a mechanism for the following reaction? (9%)



8. How would you synthesize the following compound from any starting materials or reagents containing no more than **four** carbon atoms? (10%)

