

淡江大學 107 學年度日間部寒假轉學生招生考試試題

系別：化學系三年級

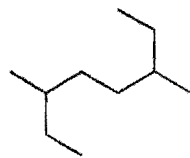
科目：有機化學 **28-1**

考試日期：1月13日(星期日) 第2節

本試題共 **2** 大題， **3** 頁

I. 選擇題 (20 pts, 2 pts each)

1. What is the parent chain for the following compound?

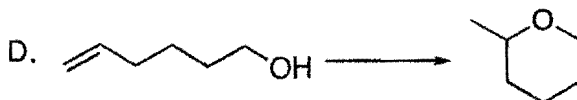
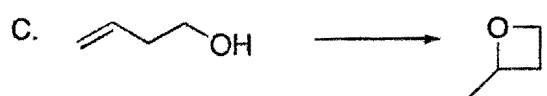
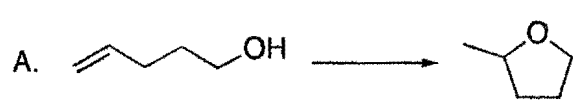


- A. octane
- B. hexane
- C. heptane
- D. decane

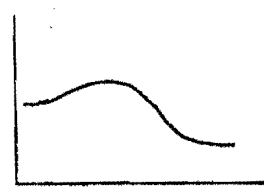
2. Why is entropy negative for ring closures?

- A. Closing a ring results in fewer molecules.
- B. Closing a ring results in more molecules.
- C. Closing a ring releases energy.
- D. Closing a ring restricts the rotation around individual carbon-carbon bonds.

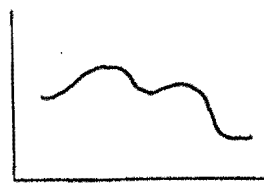
3. Which of the following would you expect to have the most negative ΔS ?



4. Which of the following is an energy diagram for a two-step reaction?



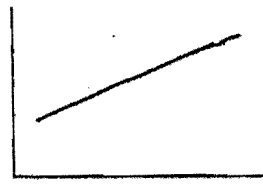
A.



B.

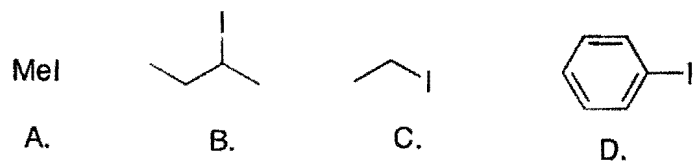


C.



D.

5. Rank the following substrates from most to least reactive in an S_N2 reaction.



A.

B.

C.

D.

A. A>B>C>D

B. D>C>B>A

C. A>C>B>D

D. D>C>B>A

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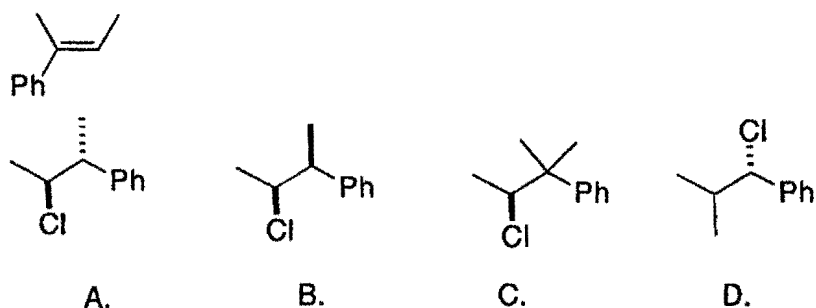
28-2

考試日期：1月13日(星期日) 第2節

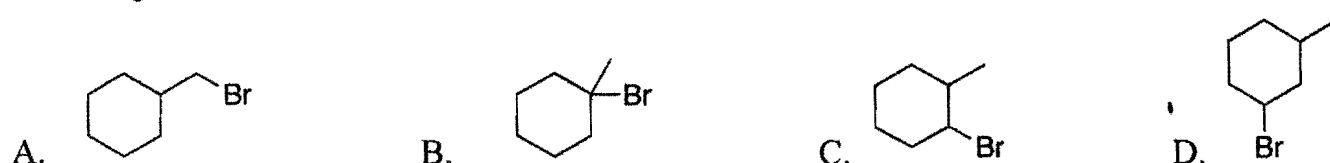
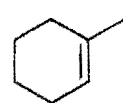
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2 大題, 3 頁

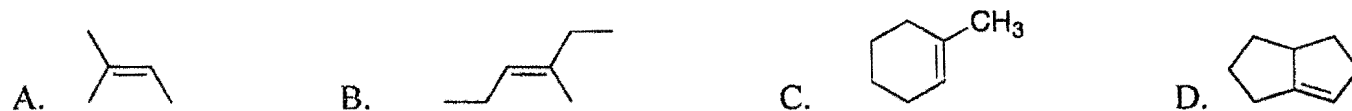
6. Which of the following alkyl halides would afford the indicated product upon reaction with sodium ethoxide?



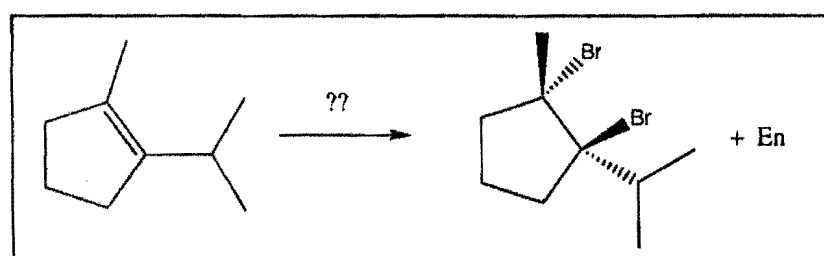
7. Which of the molecules below arises from anti-Markovnikov hydrohalogenation with HBr of the alkene shown?



8. Which of the alkenes shown below would produce a chirality center upon hydrohalogenation?



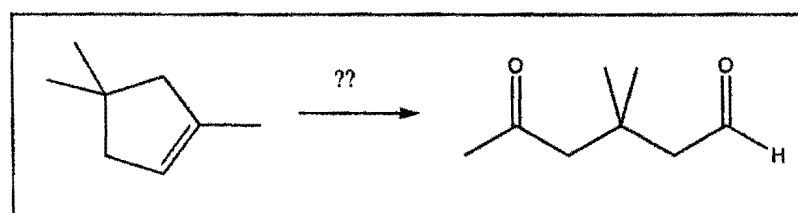
9. Provide the reagent(s) required to complete the following transformation:



Options for question 9:

- A. HBr
- B. $\text{Br}_2/h\nu$
- C. Br_2
- D. HBr/ROOR

10. Predict the reagent(s) required to complete the following transformation:



Options for question 10:

- A. 1) OsO_4 ; 2) $\text{NaHSO}_3, \text{H}_2\text{O}$
- B. 1) $\text{Hg}(\text{OAc})_2, \text{H}_2\text{O}$; 2) NaBH_4
- C. 1) RCO_3H ; 2) H_3O^+
- D. 1) O_3 ; 2) DMS

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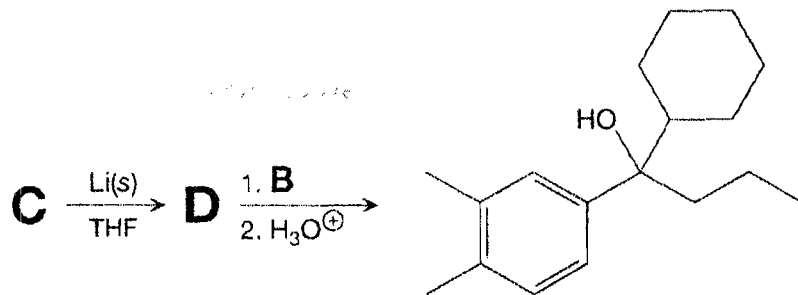
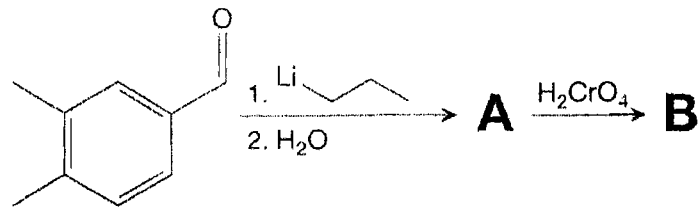
28-3

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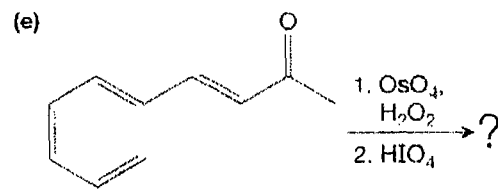
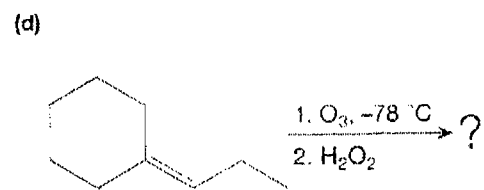
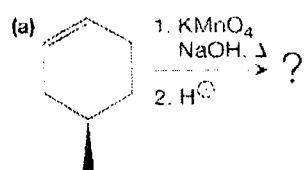
本試題共 2 大題, 3 頁

II. 申論題 (80 pts)

1. Provide the missing intermediates and reagents in the following synthesis. (20 pts)



2. Draw the product of each of the following reactions. (40 pts)



3. Draw the complete, detailed mechanism for the following reaction. (20 pts)

