

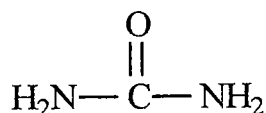
大葉大學 95 學年度轉學招生考試試題紙

系	組	別	日\第二部	年級	考試科目 (中文名稱)	考試日期	節次	備註
分子生物科學系			日	三	有機化學	8月7日	3	11=10 ~ 12=30 共二頁

註：考生可否攜帶計算機或其他資料作答，請在備註欄註明（如未註明，一律不准攜帶） P 2-1

共 10 題，每題 10 分，答錯不倒扣。本題目共兩頁，『請依題號於答案卡上畫記作答』！(P2-1)

1. The structure of urea is shown below. The predicted N-C=O bond angle in urea is:

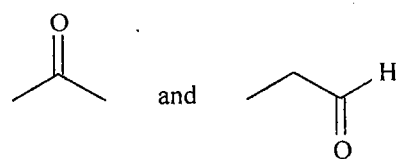


- A. 109.5      B. 120      C. 180      D. not predictable

2. An acid with a low pKa:

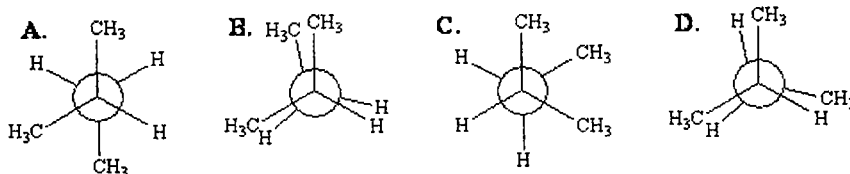
- A. is a weak acid      B. is a strong acid  
C. has a weak conjugate base      D. both B and C

3. The best statement for the following pairs of compounds is:

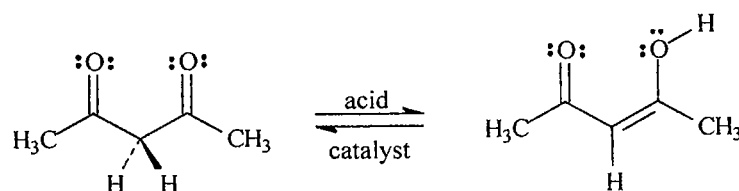


- A. identical      B. constitutional isomers  
C. stereoisomers      D. none of above

4. The Newman projection for the conformation of 2-methylbutane are listed below. Which one has the energy maximum corresponds to its Newman projection?



5. Consider this reaction and to choose the best statement for the question. This reaction is an example of:



76%

- A. a substitution reaction.      B. a rearrangement reaction.  
C. an addition reaction.      D. an elimination reaction.

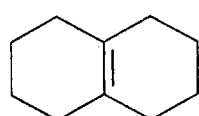
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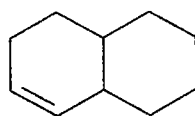
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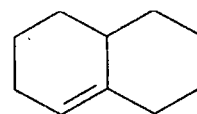
6. Arrange the following bicyclic alkenes in order of increasing stability (least stable to most stable).



I



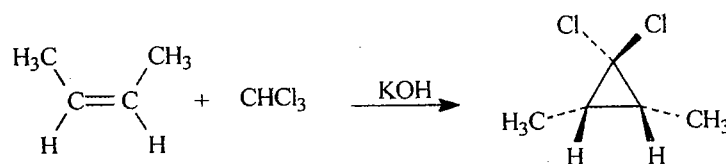
II



III

- A. III < II < I      B. I < II < III      C. I < III < II      D. II < III < I

- 7-8, Consider the reaction below to answer the following questions.



When dichlorocarbene is generated in the presence of an alkene, a dichlorocyclopropane is formed.

7. In the reaction of an alkene with dichlorocarbene, the dichlorocarbene is the:
- A. electrophile.      B. Lewis base.      C. nucleophile.      D. both B and C.
8. The reaction of an alkene with dichlorocarbene is:
- A. regioselective.      B. Markovnikov.      C. stereospecific.      D. non-Markovnikov.
9. Which one is the *best* solvent for an S<sub>N</sub>2 reaction?
- A. HMPA      B. CHCl<sub>3</sub>      C. H<sub>2</sub>O      D. CH<sub>3</sub>CH<sub>2</sub>OH
10. Which of the following statements best describes the base peak in a mass spectrum?
- A. The peak from the most stable radical.  
 B. The peak from the species that has the isotope with the highest atomic number.  
 C. The peak of highest intensity.  
 D. The peak from the molecule minus an electron.