

大同大學 107 學年度 (暑)轉學入學考試試題

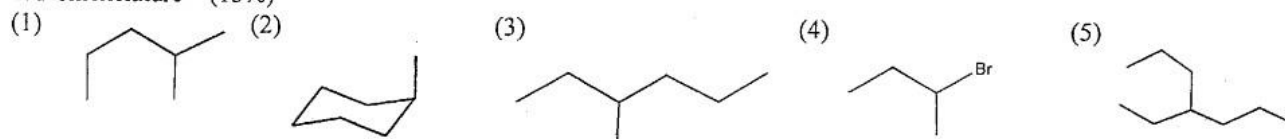
考試科目:有機化學

系別:化學工程學系

第1/2頁

註:本次考試 不可以參考自己的書籍及筆記; 不可以使用字典; 不可以使用計算器。

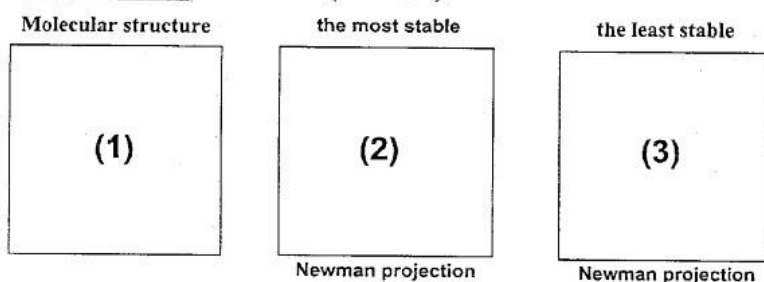
1. Nomenclature (15%)



2. Draw the following molecular structures. (15%)

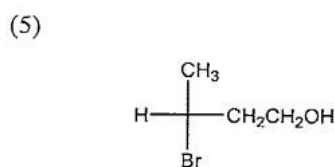
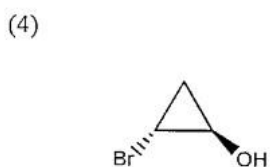
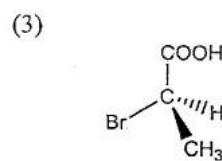
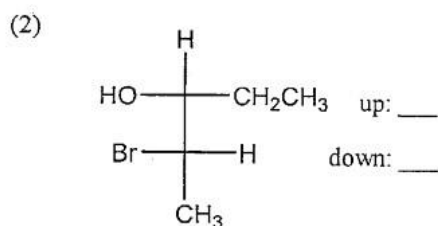
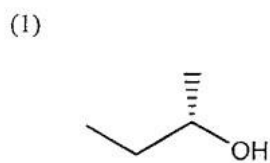
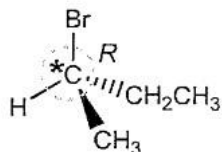
(1) 3-ethyl-2,4,6-trimethyloctane (2) 2,2,3,4-tetramethylpentane (3) hexane (4) 1-butyne (5) aniline

3. For rotation about the C-3 —C-4 bond of 2,2,5,5-tetramethylhexane, please draw the molecular structure and Newman projection of its the most stable and the least stable conformers. (3+3+3 %)



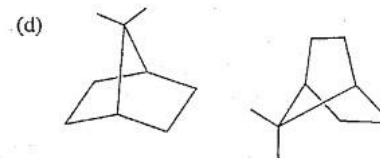
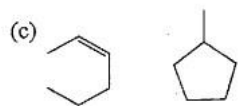
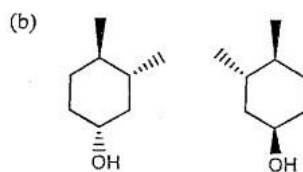
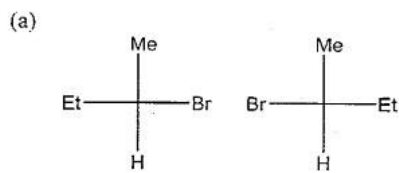
4. Indicate whether each of the following structures has the *R* or the *S* configuration: (14%)

For example :

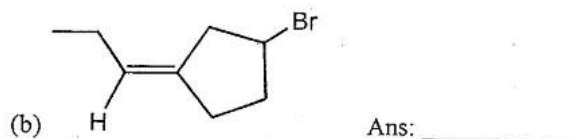
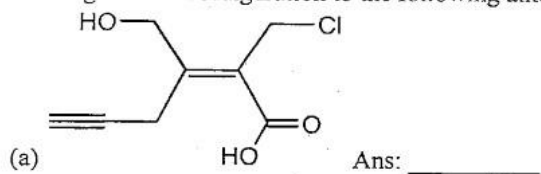


Left: ___ Right: ___

5. For each pair of compounds below, determine whether they are identical compounds, constitutional isomers, enantiomers or diastereomers: (12%)



6. Assign *E* or *Z* configuration to the following alkenes. (4%)



背面尚有試題

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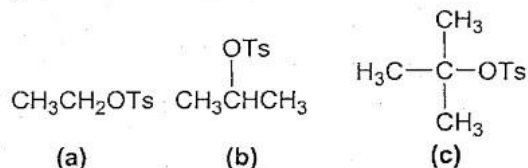
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7.



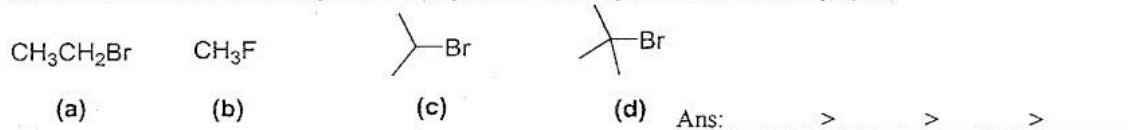
(1) Rank the above compounds in order of their expected reactivity toward $\text{S}_{\text{N}}1$ reaction: (3%)

Ans: _____ > _____ > _____

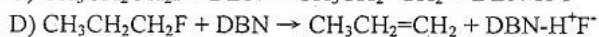
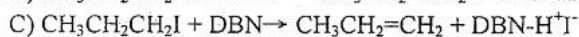
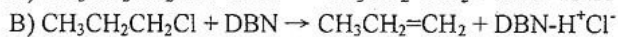
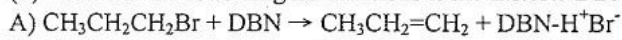
(2) Rank the above compounds in order of their expected reactivity toward E2 reaction: (3%)

Ans: _____ > _____ > _____

(3) Order each of the following sets of compounds with respect to $\text{S}_{\text{N}}2$ reactivity: (4%)



(4) Which of the following E2 reactions is the fastest? DBN is a steric organic base. (_____) (3%)



8. Predict the products of the following reaction.

