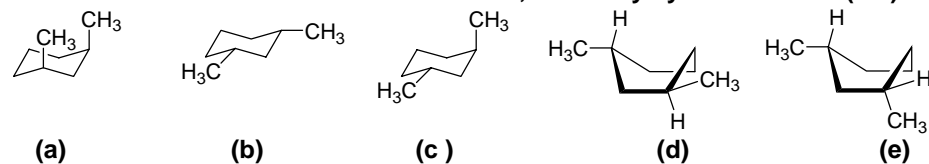


國立嘉義大學九十四學年度
生物藥學研究所碩士班招生考試試題

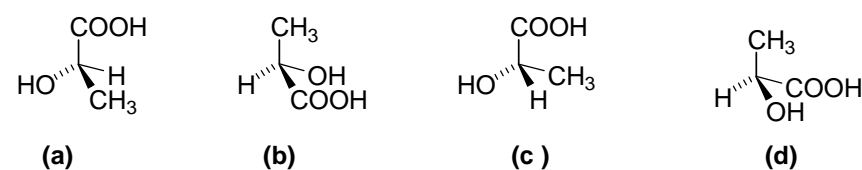
科目：有機化學

一、選擇題(70%)

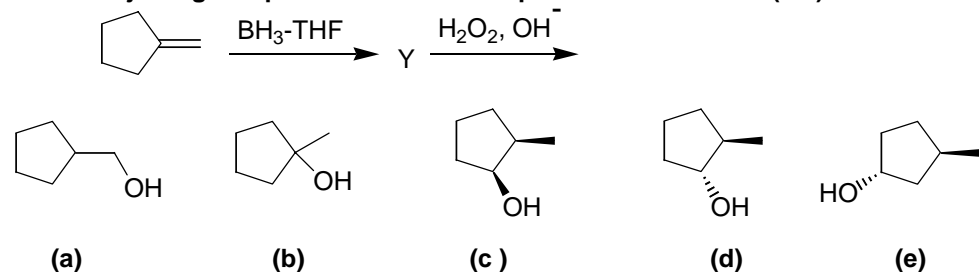
1. Which is the most stable conformation of *cis*-1,3-dimethylcyclohexane? (5%)



2. Which forms of lactic acid are *R* forms? (5%)



3. What is the major organic product from this sequence of reactions? (5%)

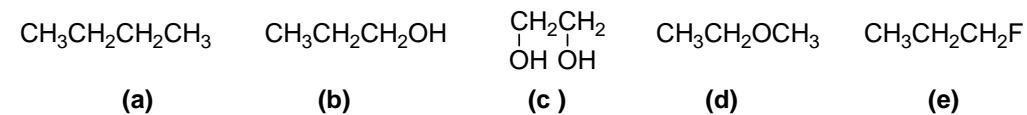


4. Consider the substitution reaction that takes place when (*R*)-3-bromo-3-methylhexane is treated with methanol. Which of the following would be true? (5%)

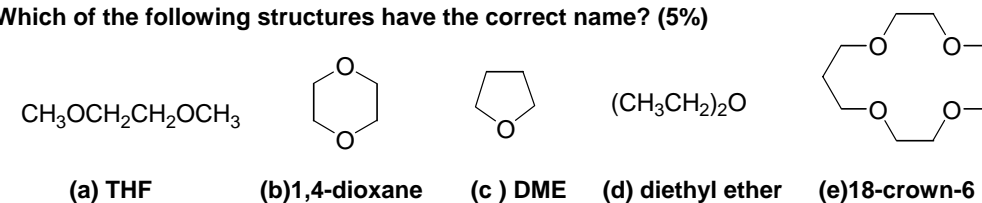
- (a) The reaction would take place only with inversion of configuration at the stereocenter.
- (b) The reaction would take place only with retention of configuration at the stereocenter.
- (c) The reaction would take place with racemization.
- (d) No reaction would take place.
- (e) The alkyl halide does not possess a stereocenter.

5. The following compounds all have approximately the same molecular weight.

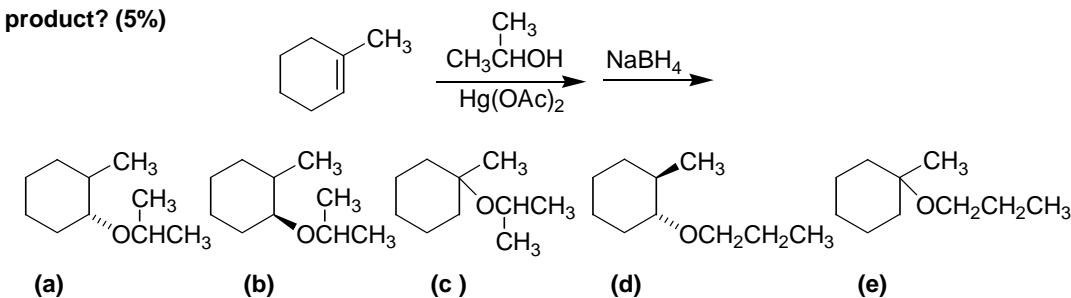
Which has the highest boiling point? (5%)



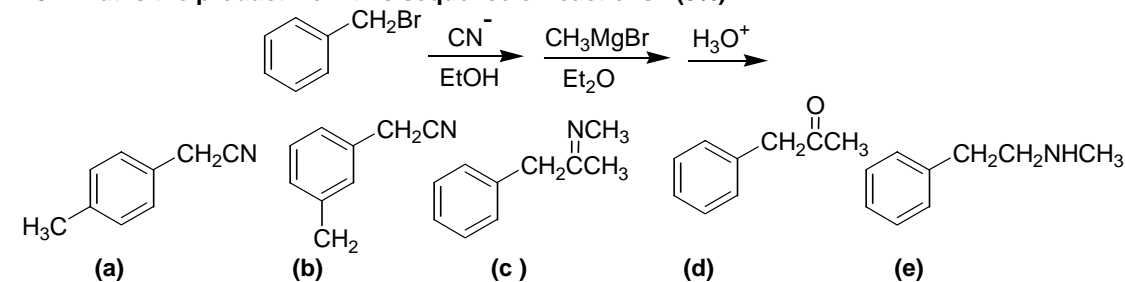
6. Which of the following structures have the correct name? (5%)



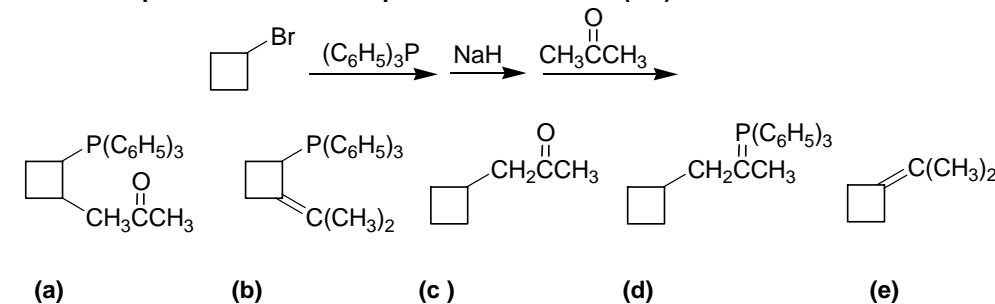
7. Based on your knowledge of oxymercuration-reduction, what is the major organic product? (5%)



8. What is the product from this sequence of reactions? (5%)

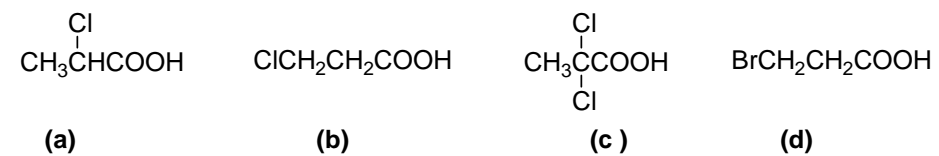


9. What is the product from this sequence of reactions? (5%)

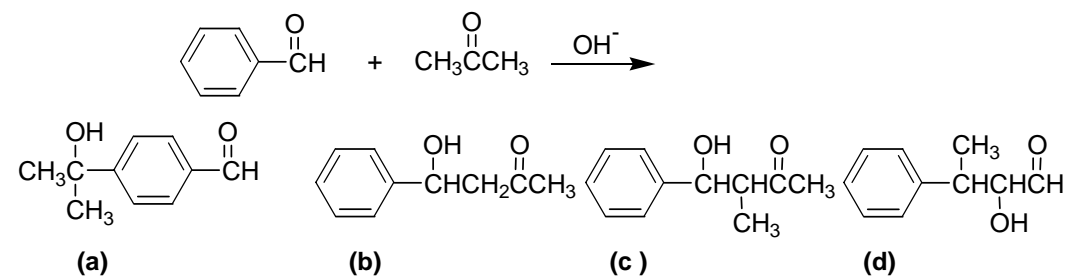


背面尚有試題

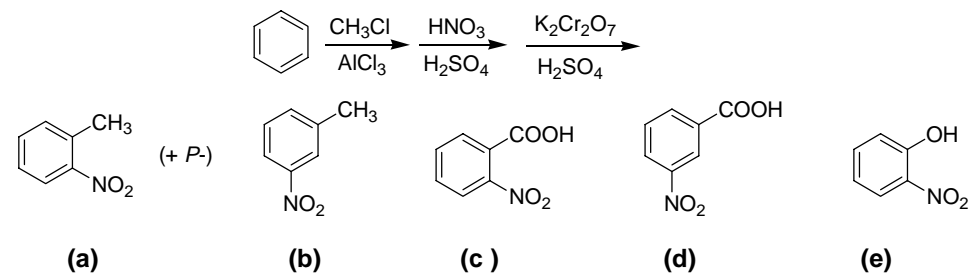
10. Arrange these compounds in order of increasing acidity (lowest first). (5%)



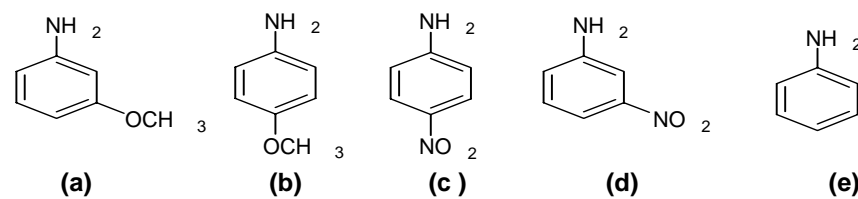
11. What is the major organic product from the following reaction? (5%)



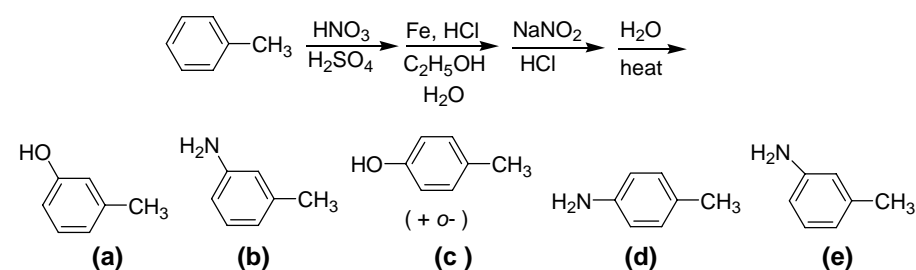
12. Which is the major organic product from this sequence of reaction? (5%)



13. Which of the following is the strongest base?(5%)



14. Which is the major organic product from this sequence of reaction? (5%)



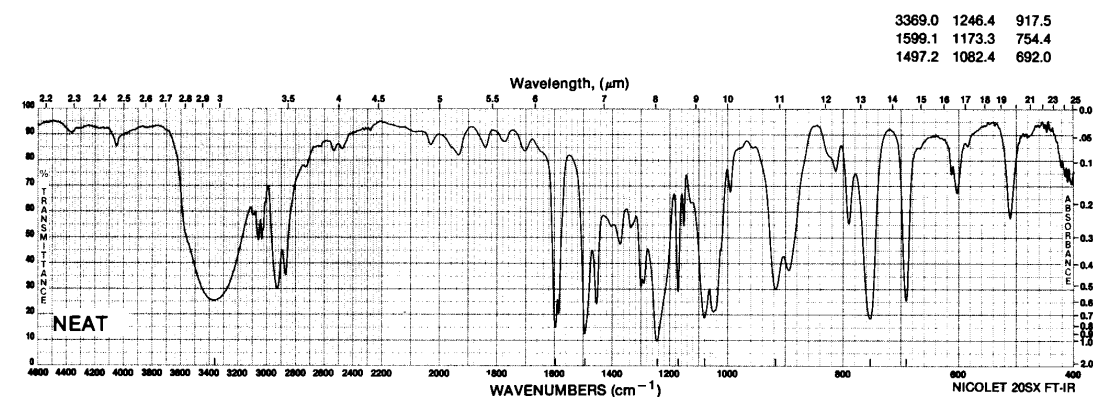
二、 Write structural formulas for each of the following.(10%)

- (a) Pyrimidine (b) Purine (c) Indol (d) Quinoline (e) Pyrrole

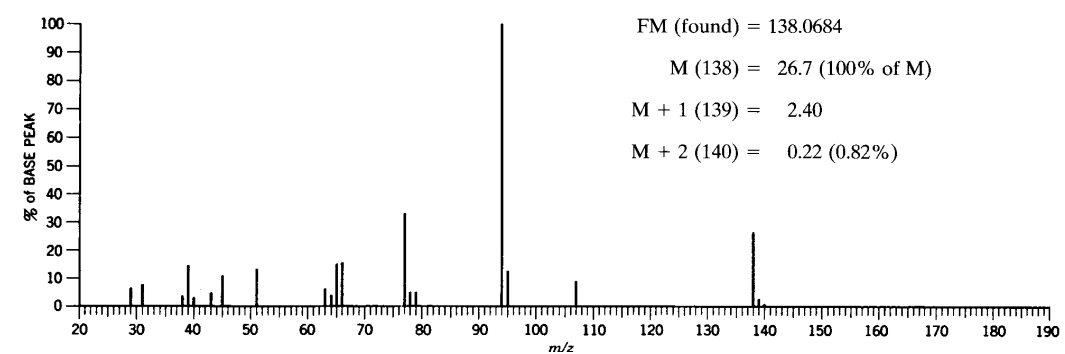
三、問答題(20%)。

下列 A-D 圖為某化合物之儀器分析圖譜，請說明如何利用光譜圖判定其化學結構，並畫出推測之化學結構式。(20%)

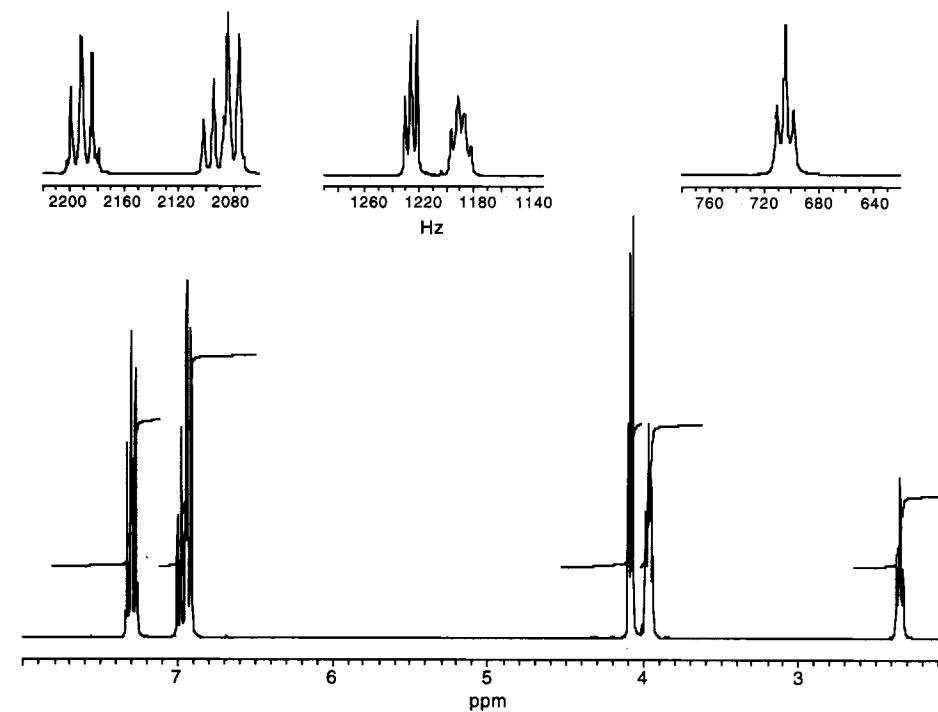
A. Infrared (紅外線光譜)圖



B. EI-MS(質譜)圖



C. $^1\text{H-NMR}$ (氫譜)圖



背面尚有試題

D. ^{13}C -NMR(碳譜)及 DEPT 圖譜

$^{13}\text{C}/\text{DEPT}$

