

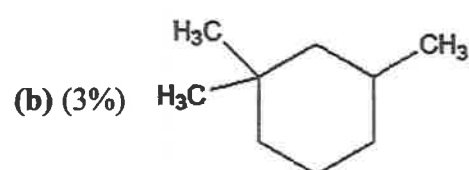
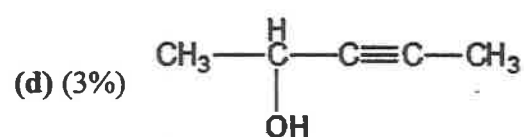
國立臺灣科技大學 112 學年度碩士班招生試題

系所組別：材料科學與工程系碩士班甲組

科目：有機化學

(總分為 100 分；所有試題務必於答案卷內頁依序作答，否則不予計分)

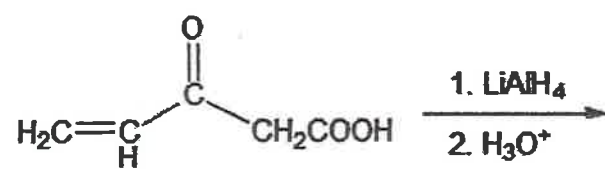
1. (Total 15%) Give a systematic (IUPAC) name for each compound.

(a) (3%) $\text{CH}_3\text{CH}(\text{Cl})\text{C}(\text{Br})_2\text{CH}_3$ (c) (3%) $\text{CH}_3\text{CH}_2\text{C}\equiv\text{CCH}_2\text{CH}=\text{CH}_2$ 

2. (2%) Predict which member of following has the lowest boiling point?

(a) pentan-2-ol (b) heptan-2-ol (c) pentane-1,5-diol

3. (3%) Which product would you expect from the following reaction?



- (a) $\text{CH}_2=\text{CHCH}(\text{OH})\text{CH}_2\text{COOH}$
 (b) $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{COOH}$
 (c) $\text{CH}_2=\text{CHCH}(\text{OH})\text{CH}_2\text{CH}_2\text{OH}$
 (d) $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{CH}_2\text{OH}$



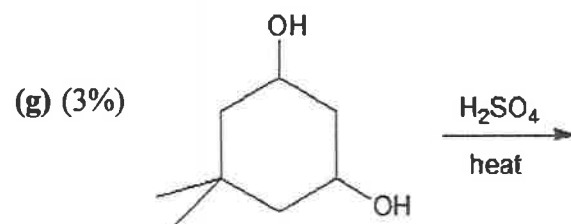
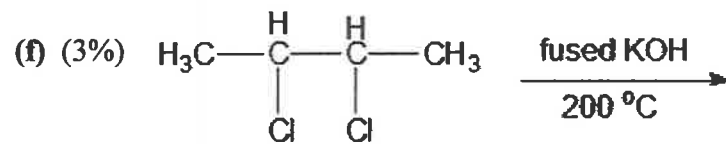
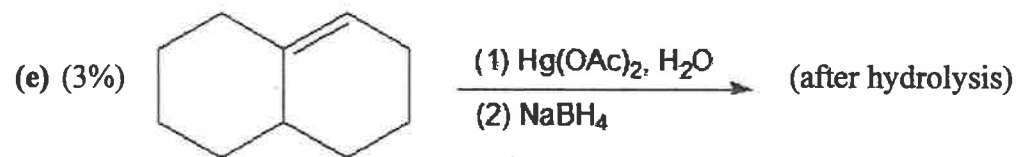
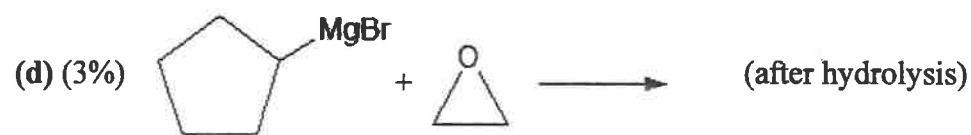
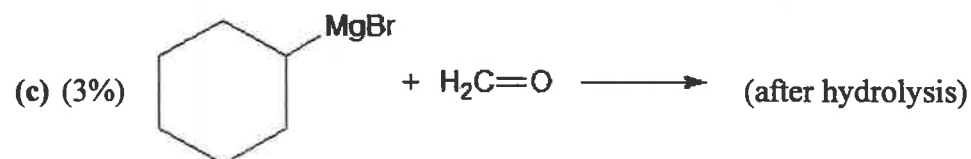
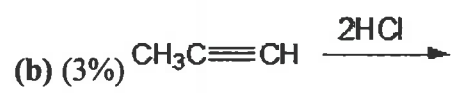
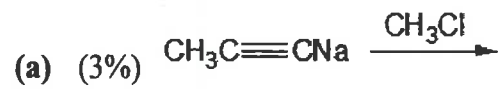
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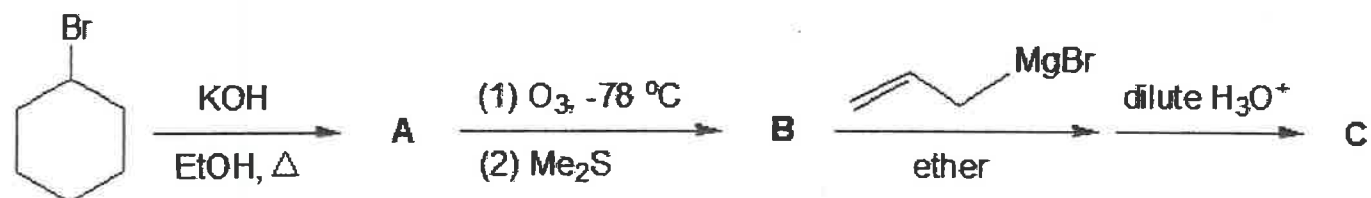
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4. (Total 21%) Draw the organic products you would expect to isolate from the following reactions.



5. (Total 9%, each 3%) Predict the products A, B and C. Assume that an excess of each reactant is added so that all possible reactions that can happen will happen.



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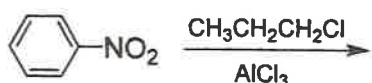
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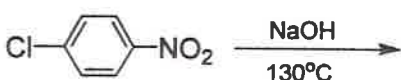
(總分為 100 分；所有試題務必於答案卷內頁依序作答，否則不予計分)

6. (39%) Please predict the major products in the following reactions.

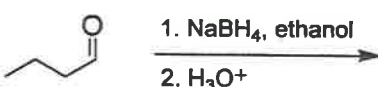
(1) (3%)



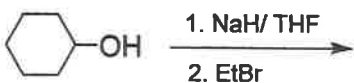
(2) (3%)



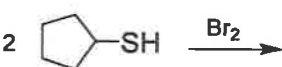
(3) (3%)



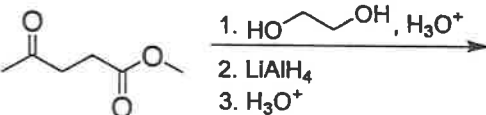
(4) (3%)



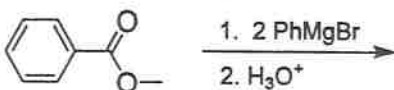
(5) (3%)



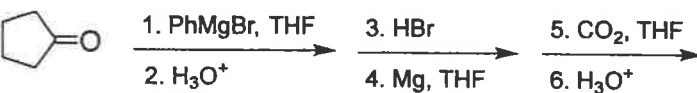
(6) (3%)



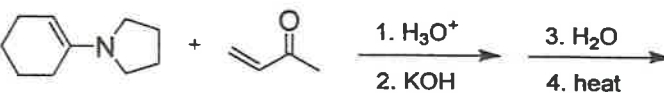
(7) (3%)



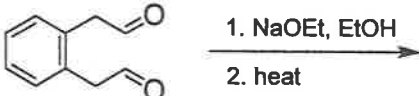
(8) (3%)



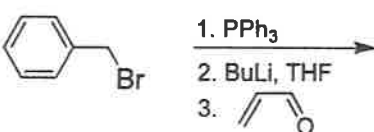
(9) (3%)



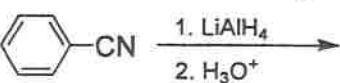
(10) (3%)



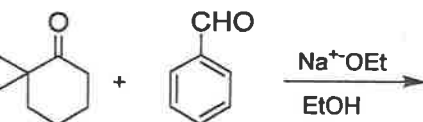
(11) (3%)



(12) (3%)



(13) (3%)



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7. (11%) Please draw the chemical structures of the polymers.

(1) (2%) Poly(lactic acid)

