

國立臺灣科技大學

115學年度碩士班招生

試題

系所組別：0410材料科學與工程系碩士班甲組

科 目：有機化學

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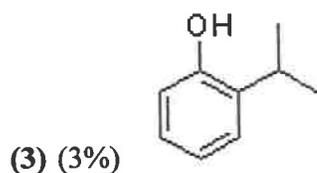
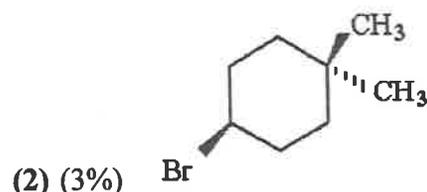
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(總分為100分;所有試題務必於答案卷內頁依序作答)

1. (Total 9%) Give a systematic (IUPAC) name for each compound.

(1) (3%) $(\text{H}_3\text{C})_2\text{HC}-\text{C}\equiv\text{C}-\text{CH}_2\text{Cl}$ 

2. (Total 10%)

(1) (5%) In the chromic acid oxidation of alcohols, the chromium is _____.

- (A) oxidized from Cr^{+3} to Cr^{+6}
- (B) reduced from Cr^{+6} to Cr^{+3}
- (C) oxidized from Cr^{+6} to Cr^{+3}
- (D) educed from Cr^{+3} to Cr^{+6}
- (E) none of the above

(2) (5%) The acidity of a thiol proton most closely resembles which of the following acids?

- (A) Phenol
- (B) Ethanol
- (C) Acetic acid
- (D) Ammonia



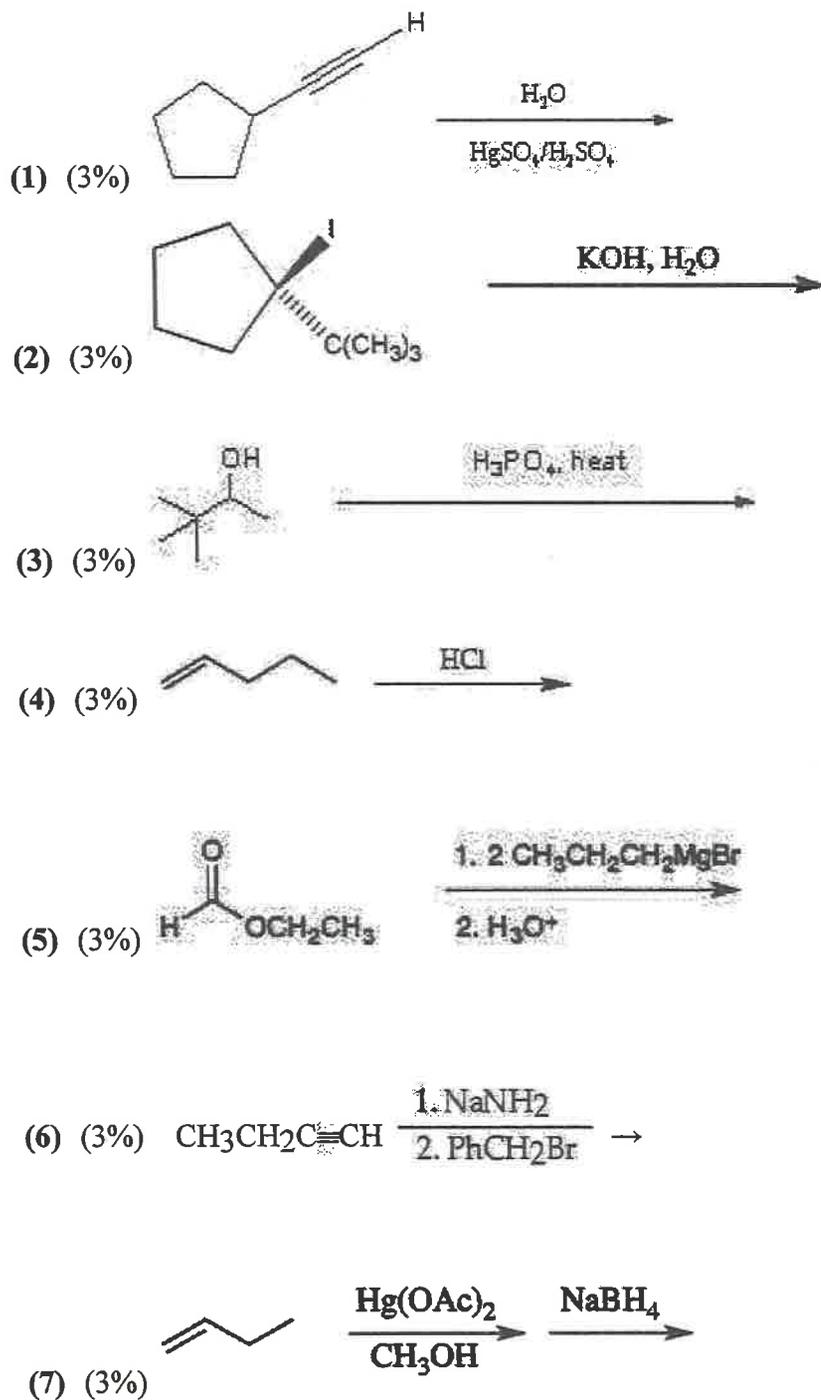
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3. (Total 21%) Draw the major organic products you would expect to isolate from the following reactions.



4. (10%) Which of the following oxidants will convert a primary alcohol to an aldehyde?

- (1) sodium dichromate /sulfuric acid. (2) copper oxide
 (3) pyridinium chlorochromate (4) dimethylsulfoxide, oxalyl chloride

- A. (3) & (4)
 B. (2), (3), & (4)
 C. (3)
 D. (1), (2), (3), & (4)

Please choose ONE option from A, B, C, and D above.



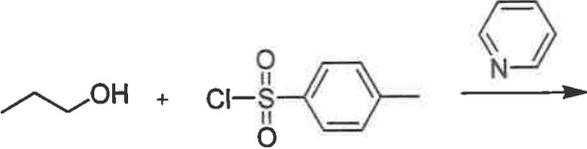
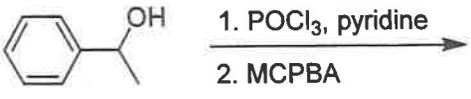
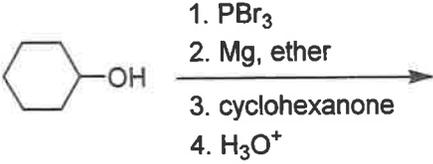
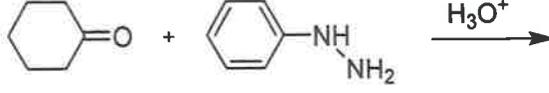
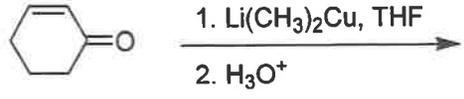
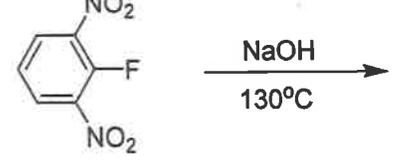
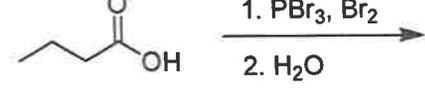
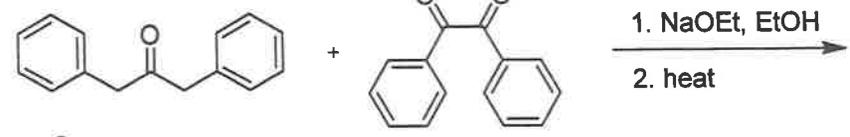
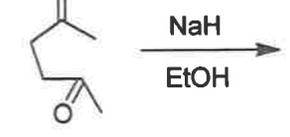
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(總分為100分;所有試題務必於答案卷內頁依序作答)

5. (30%) Predict the major products of the following reactions.

- (1) (3%) 
- (2) (3%) 
- (3) (3%) 
- (4) (3%) 
- (5) (3%) 
- (6) (3%) 
- (7) (3%) 
- (8) (3%) 
- (9) (3%) 
- (10) (3%) 



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6. (8%) Please convert the following names to the corresponding chemical structures.

(1) (2%) Poly(p-phenylenevinylene)

(2) (2%) Polyvinyl alcohol

(3) (2%) Poly(tetrafluoroethylene)

(4) (2%) Poly(methyl methacrylate)

7. (12%) Please give the products and draw the mechanisms of the following reactions.

