

科目：有機化學

適用：應化系

考生注意：

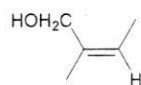
1. 依次序作答，只要標明題號，不必抄題。
2. 答案必須寫在答案卷上，否則不予計分。
3. 限用藍、黑色筆作答；試題須隨卷繳回。

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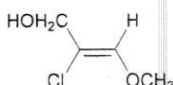
編號：371

1. Sulfur dioxide has a dipole moment of 1.60 D. Carbon dioxide has a dipole moment of zero, even though C-O bonds are more polar than S-O bonds. Explain this contradiction. (10%)
2. Assign E or Z configuration to each of the following compounds and explain: (20 %; 5% each)

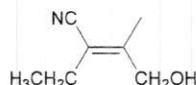
(a)



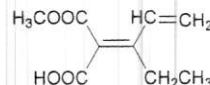
(b)



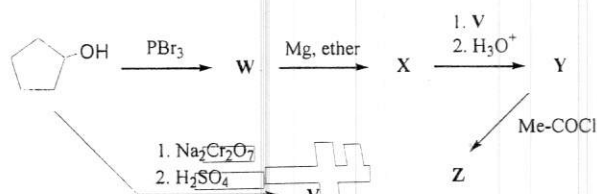
(c)



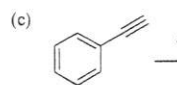
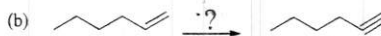
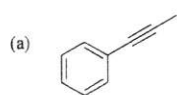
(d)



3. When a mixture of methane and chlorine is irradiated, reaction commences immediately. When irradiation is stopped, the reaction gradually slows down but does not stop immediately. Explain. (5%)
4. Give the structures of W, X, Y, Z and V. (25%; 5% each)



5. How would you carry out following reactions? (15%; 5% each)



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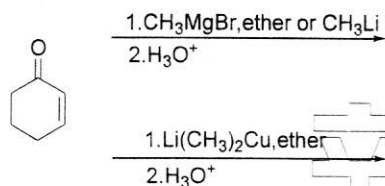
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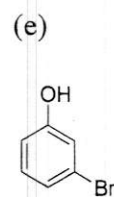
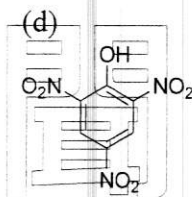
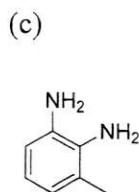
6. Predict the following products and explain. (10%; 5% each)



7. Give the IUPAC names or draw the structure for the following compounds (15%; 5% each)

(a) 2-Methyl-5-phenylhexane

(b) 1-Fluoro-2,4-dinitrobenzene



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