

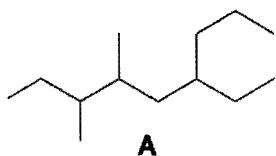
系所組別： 化學系

考試科目： 有機化學

考試日期： 0226，節次： 2

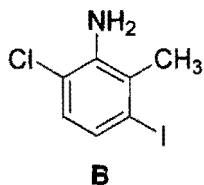
一、複選題 (20 分，每題 2 分)

1、 What is the IUPAC name of the compound A?



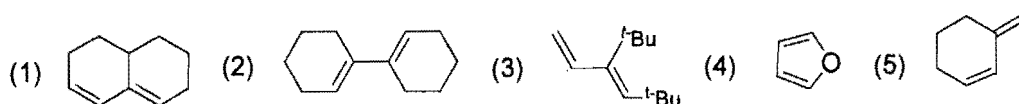
- (1) 3,4-dimethyl-6-propyloctane (2) 3,4-dimethyl-6-ethylnonane (3) 6-ethyl-3,4-dimethylnonane (4) 5,6-dimethyl-3-propyloctane (5) 4-ethyl-6,7-dimethylnonane

2、 What is the IUPAC name of the compound B?

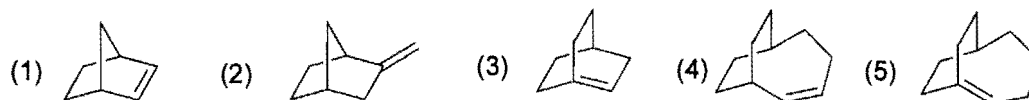


- (1) 6-chloro-3-iodo-2-methylaniline (2) 5-iodo-2-chloro-6-methylaniline (3) 2-chloro-5-iodo-6-methylaniline (4) 2-iodo-5-chloro-6-aminotoluene (5) 2-amino-3-chloro-6-iodo-toluene

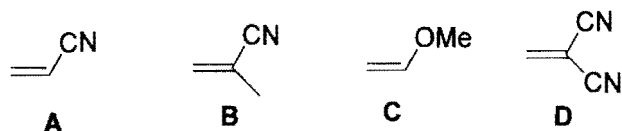
3、 Which of the following dienes **can** undergo a Diels-Alder reaction?



4、 Which of the following alkenes is **least stable**?



5、 Arrange the following dienophiles in the order of **increasing reactivity** toward cyclopentadiene in Diels-Alder reaction.



- (1) C<B<A<D (2) A<B<C<D (3) D<B<C<A (4) D<A<B<C

6、 How many signals would you expect in the broad band decoupled  $^{13}\text{C}$  NMR spectrum of anisole?

- (1) 4 (2) 2 (3) 7 (4) 5

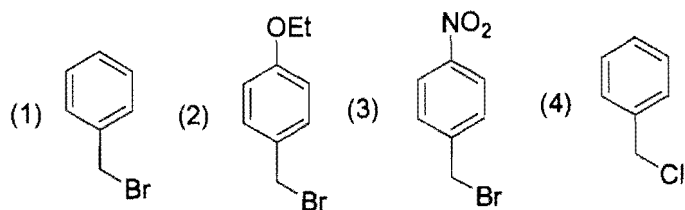
(背面仍有題目,請繼續作答)

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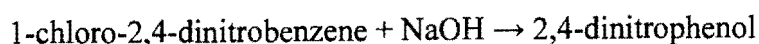
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7、 Which of the following compounds is the **easiest** one to react through a  $S_N1$  mechanism?

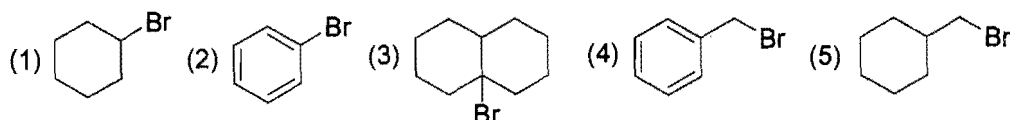


8、 Which statement is correct for the reaction shown below?

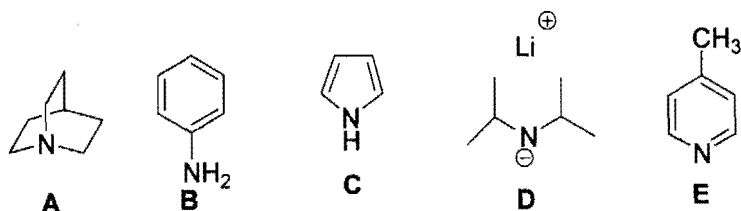


- (1) This reaction is an electrophilic aromatic substitution.  
 (2) This reaction is a  $S_N2$  Substitution.  
 (3) This reaction is a nucleophilic aromatic substitution.  
 (4) Substituted benzyne is the reaction intermediate.

9、 Which of the following compounds **can** react through a  $S_N2$  mechanism?

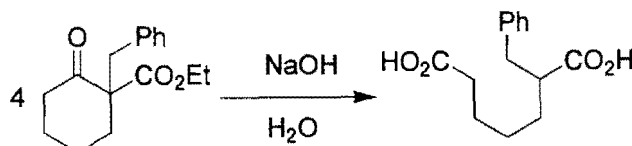
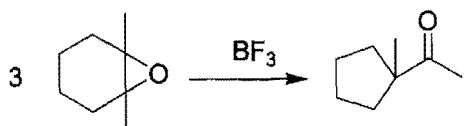
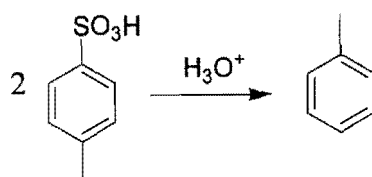
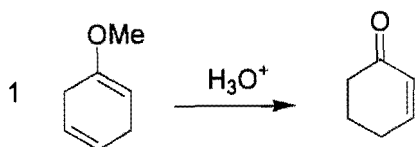


10、 Arrange the following nitrogen containing compounds in the order of **increasing basicity**.



- (1) A < B < E < C < D < E (2) C < B < E < A < D (3) B < A < C < D (4) D < A < B < C < E (5) C < E < B < A < D

二、請寫出下列各反應的反應機構。(16分，每題4分)



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三、請寫出下列各反應的生成物。(64分，每題4分)

