

11044
國立臺北科技大學 110 學年度碩士班招生考試

系所組別：3710 分子科學與工程系有機高分子碩士班甲組

第一節 有機化學 試題

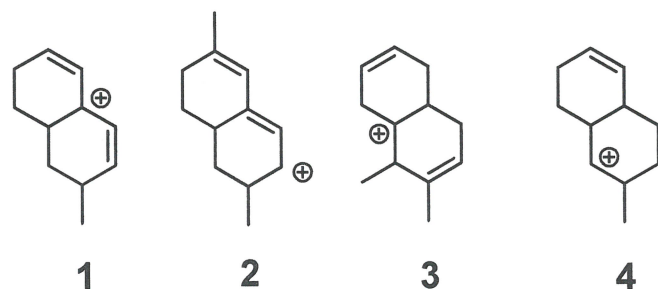
第 1 頁 共 2 頁

注意事項：

1. 本試題共兩大題，共 100 分。
2. 不必抄題，作答時請將試題題號及答案依照順序寫在答案卷上。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

一、單選題 (共 20 分)

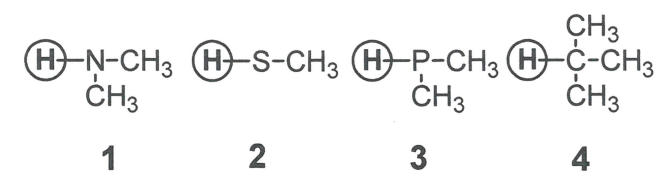
- (1) 【 】 (4%) Rank the following carbocations in order of stability.



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

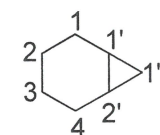
- (2) 【 】 (4%) If a chiral molecule has an absolute configuration of R, which direction does it rotate the plane of polarized light?
(A) clockwise (dextroatory)
(B) counterclockwise (levorotatory)
(C) it doesn't rotate the plane of polarized light
(D) can't be determined from the information given.

- (3) 【 】 (4%) Rank the following sets of molecules in order of acidity



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

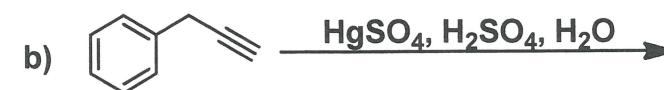
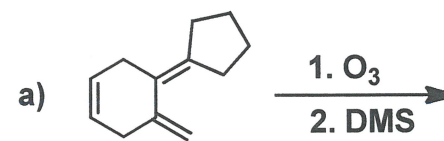
- (4) 【 】 (4%) What term describes the structural relationship between (2R,3R,4S)-2,3,4-trichloroheptane and (2S,3S,5R)-2,3,5-trichloroheptane?
(A) not isomers
(B) constitutional isomers
(C) enantiomers
(D) diastereomers
- (5) 【 】 (4%) What is the IUPAC name of the following bicycloalkane?



- (A) bicyclo[6.3.0]heptane
(B) bicyclo[4.1.0]hexane
(C) bicyclo[4.2.1]hexane
(D) bicyclo[4.1.0]heptane

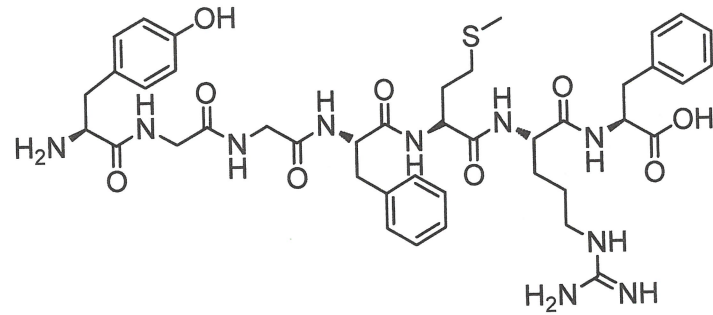
二、問答題 (共 80 分)

- (1) (20%) Show the product(s) of each reaction. Ignore stereochemistry.

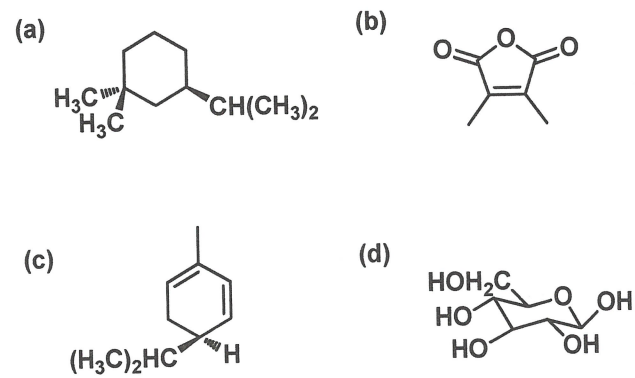


注意：背面尚有試題

(2) (10%) Met-enkephalin, an endorphin, serves as a natural pain reliever that changes or removes the perception of nerve signals. Label all of the functional groups present in Met-enkephalin.



(3) (20%) How many asymmetric carbon atoms are present in the following compound?



(4) (30%) Which are best reagents, solvents and conditions for following reaction?

