



Eastern University, Sri Lanka

Third Year First Semester Examination in Science

2008/2009 (February 2010)

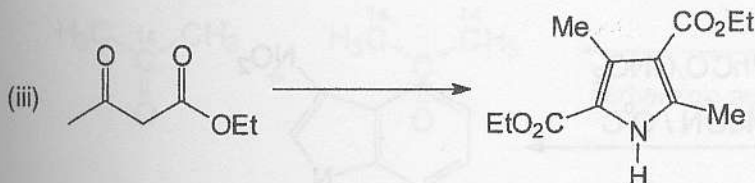
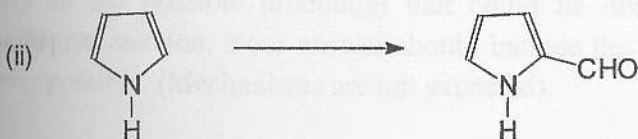
CH 302 Heterocyclic Chemistry and Rearrangement
Reactions

(Proper)

Answer all questions

Time: 01 hour

1. (a) Indicate by means of equation how the following conversions could be effected. Give essential experimental conditions

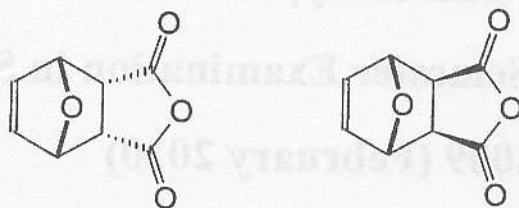


(30 marks)

Turn Over

(b) Explain the following observations

(i) Furan adds readily to maleic anhydride and results in **endo** adduct initially and it is converted to **exo** adduct.

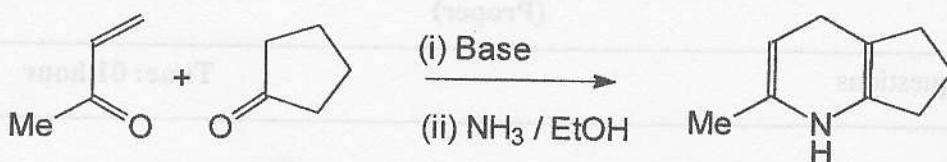


endo adduct

Exo adduct

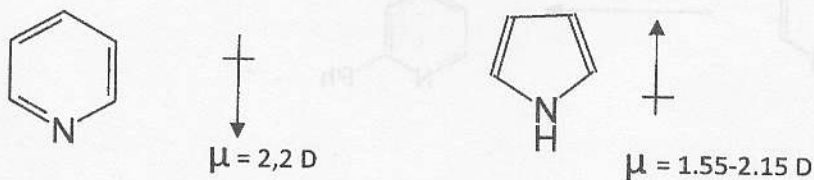
(20 marks)

(ii)



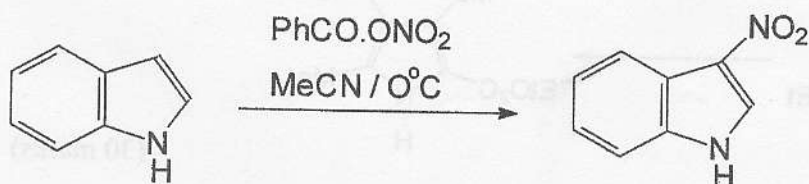
(20 marks)

(iii) Dipole moments of pyridine and pyrrole are indicated as below.



(15 marks)

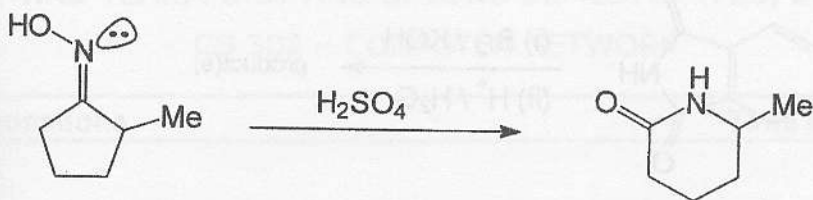
(iv)



(15 marks)

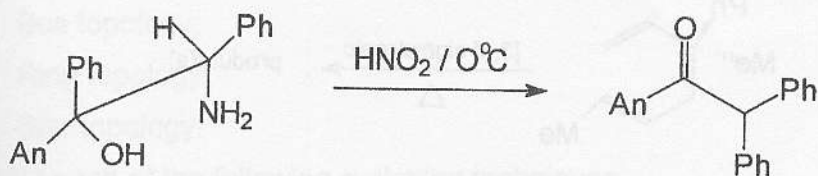
2. (a) Suggest a plausible mechanisms for the followings

(i)



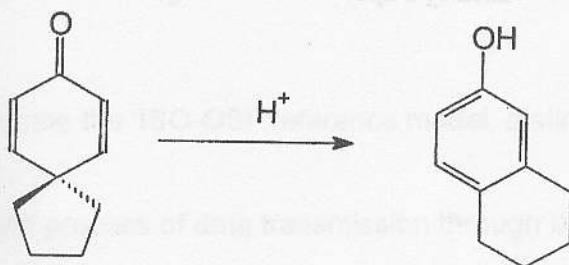
(20 marks)

(ii)



(20 marks)

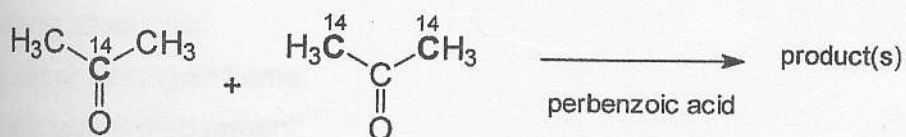
(iii)



(20 marks)

(b) Identify all the possible product(s) that could be obtained in each of the following rearrangement reaction. Your answer should include the stereochemistry of the product(s) wherever possible (Mechanisms are not expected).

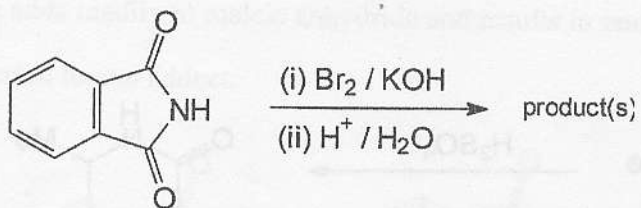
(i)



(15 marks)

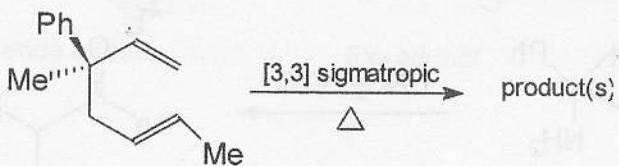
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(ii)



(10 marks)

(iii)



(15 marks)

End of Paper