



Eastern University, Sri Lanka

Second Year First Semester Examination in Science

2008/2009 (April/May 2010)

External Degree (2004/2005)

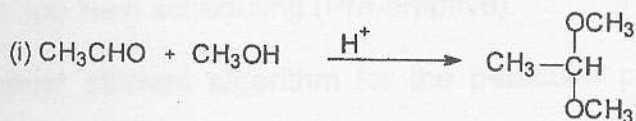
EXTCH204 Reaction Mechanism and Aromaticity
(Proper & Repeat)

Answer **all** questions

Time: 01 hour

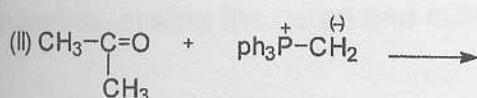
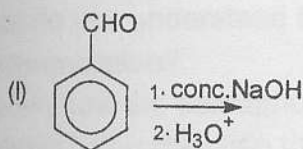
[1]

- (a) Write structural formulas for the product formed when $(\text{CH}_3)_2\text{CHCHO}$ reacts with each of the following reagents;
- NaBH_4 in aqueous NaOH
 - $\text{C}_6\text{H}_5\text{MgBr}$, then H_2O
 - $\text{OHCH}_2\text{CH}_2\text{OH}$ in H^+
 - Hydrazine
- (b) Suggest a reasonable mechanism that will account for the formation of the following product.



[2]

- (a) Write a mechanism for the following reaction;

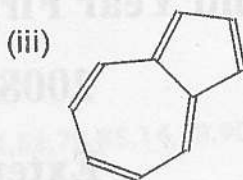
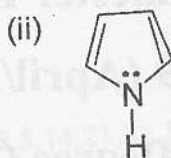
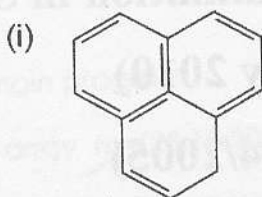


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(b) (i) State Huckel's rule?

(ii) Would you expect the cyclopentadienyl cation to be aromatic on the basis of Huckel's rule? Explain your answer.

(iii) Determine whether the following compounds are aromatic or not, by using Huckel's rule.



End of Paper