

## EASTERN UNIVERSITY, SRI LANKA THIRD EXAMINATION IN SCIENCE FIRST SEMESTER- 2003/2004 (Repeat)

## CH 302 HETEROCYCLIC CHEMISTRY AND RE-ARRANGEMENT REACTIONS

**Answer all Questions** 

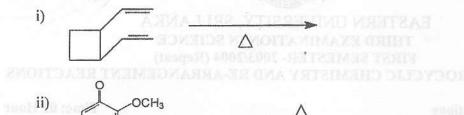
Time: 01 Hour

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01) a) Suggest a plausible mechanism for each of the following rearrangement reactions.

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b) Predict the product expected in each of the following reactions.



02) a) Identify the compounds  $\underline{\mathbf{A}}$ ,  $\underline{\mathbf{B}}$  and  $\underline{\mathbf{C}}$  in the following synthesis and explain the mechanism involved in (ii).

i) 2 CH<sub>3</sub>-C-CH<sub>2</sub>-C-OCH<sub>2</sub>CH<sub>3</sub> + CH<sub>3</sub>CHO 
$$\longrightarrow \underline{A}$$
  $\xrightarrow{NH_3} \underline{B}$   
ii)  $\underline{A}$  +  $\underline{B}$   $\xrightarrow{i)$  OH- $\stackrel{\cdot}{\cup}$   $\underline{C}$ 

- b) Explain the following observations.
  - i) In pyrole electrophilic substitution reaction will take place at position 2.
  - ii) Thiophene shows more aromatic character than furan and pyrole.
- c) Predict the major product expected in each of the following reactions.

i) 
$$\frac{H_3O^+}{OAc}$$
ii) 
$$\frac{POCl_3 / DMF}{NaOAc}$$

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