EASETRN UNIVERSITY, SRI LANKA

SECOND EXAMINATION IN SCIENCE –SPECIAL REPEAT

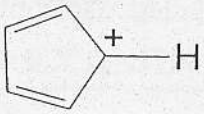
FIRST SEMESTER 2004-2005 (DECEMBER 2006)

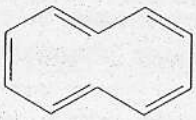
CH 204 REACTION MECHANISM AND AROMATICITY

Time allowed: ONE Hour

Candidate must NOT start writing their answers until told to do so

(1) (a) Classify the following species as aromatic, antiaromatic or non-aromatic. Give reasons for your classification.

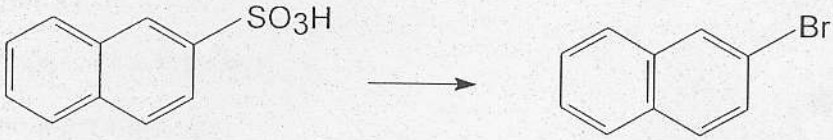
(i) 

(ii) 

(b) Nitration of naphthalene with conc. HNO_3 and conc. H_2SO_4 gives 1-nitronaphthalene as the major product. Explain.

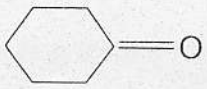
(c) Outline the molecular orbitals of cyclopentadienyl system using polygon and circle method.

(d) Indicate by means of equations how the following transformations could be effected.



(2) (a) Write a mechanism for the following

(i) $PhCHO + CH_2(COOEt)_2 \xrightarrow[\text{(ii) } H^+/H_2O,\text{heat}]{\text{(i) Piperidine}}$

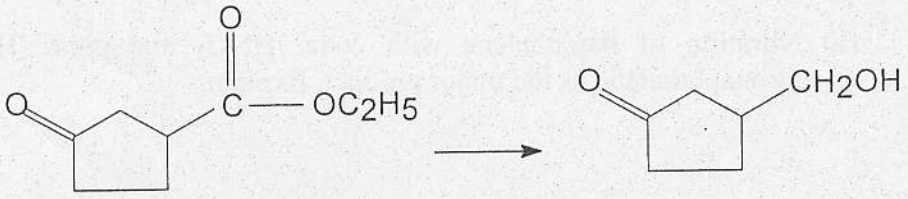
(ii) 

$\xrightarrow{Ph_3\overset{+}{P}\text{-}\overset{-}{C}H\text{-}CH_3}$

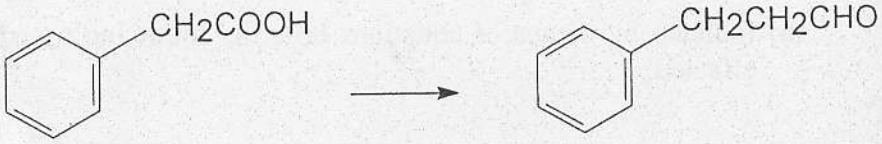
Cont..

(b) Indicate by means of equations how the following transformations could be effected. Give essential experimental conditions.

(i)



(ii)



End