EASTERN UNIVERSITY, SRI LANKA

SECOND YEAR FIRST SEMESTER EXAMINATION IN SCIENCE

2012/2013 (April/June 2015)

CH204 REACTION MECHANISM AND AROMATICITY

(Proper & Repeat)

Answer all questions **Time Allowed: One hour**

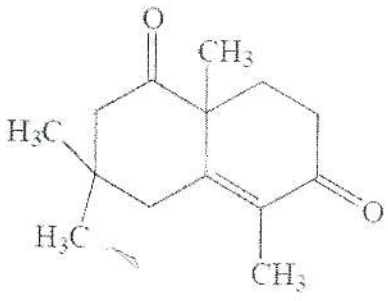
1 (a) Describe the following briefly;

i. annulenes

ii. Craig rules for poly nuclear non-benzenoid hydrocarbons

(40 Marks)

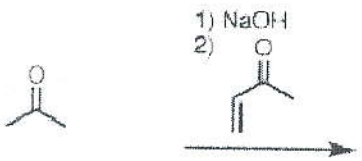
(b) Propose a detailed mechanism for the formation of the following product of a Robinson annulation reaction.



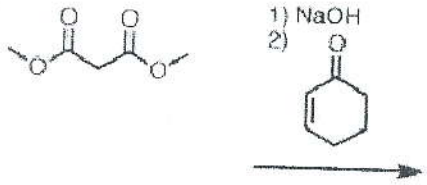
(20 Marks)

(c) Draw the possible product(s) that would be used to synthesize from the following reactants.

i.

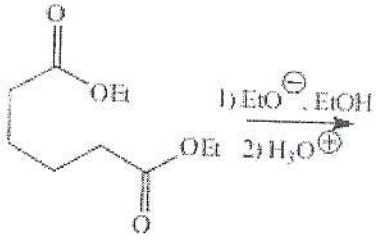


ii.



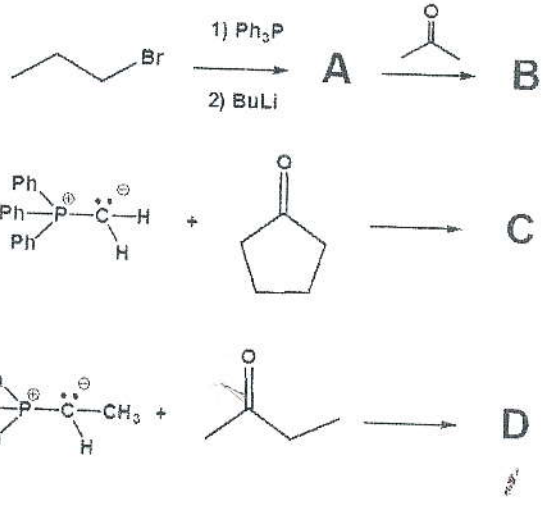
(20

(d) Propose a suitable mechanism for the following reaction.



(20 M

2 (a) i. Write down the possible products (**A**, **B**, **C**, **D**) of the following reactions.



(20 M

ii. Propose a detailed reaction mechanism during the reaction given that prod product **D**.

(20 Ma

(b) i. What is 'Huckel rule' for predicting aromaticity and describe the criteria for aromaticity under this rule.

ii. Using the above rule determine the aromaticity of the following molecules:

I) Pyridine

II) Pyrrole

III) Benzene

(30 Marks)

(c) Using Polygon & Circle method to find out whether the following compounds are aromatic or not.

i. Cyclopropenyl cation

ii. Tropylium cation

(20 Marks)

(d) Suggest a possible mechanism of benzaldehyde reacts with propanoic anhydride in the presence of potassium propanoate.

(10 Marks)

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