



ACA-3862

Seat No. \_\_\_\_\_

M. Sc. (Chemistry) (Sem. II) Examination

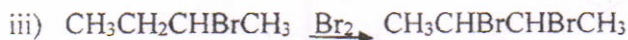
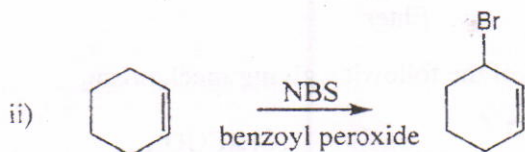
March / April - 2019

CHN - 502 : Organic Chemistry : Paper - VIII

Time : 3 Hours]

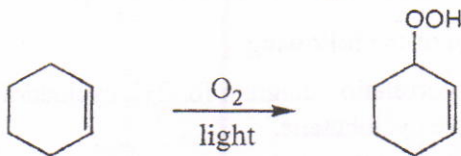
[Total Marks : 70

1 A) Attempt any two of the following. Give **mechanism** and possible products in the following. [06]



B) Attempt any two of the following explaining the mechanism. [08]

i) What is the kind of the following reaction? Give mechanism.



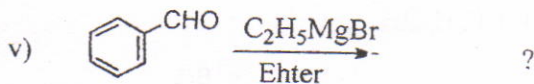
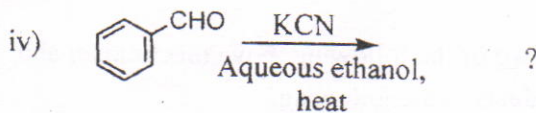
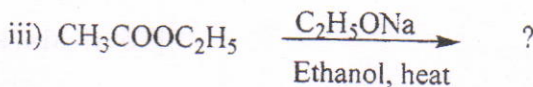
ii) How would the following conversion be carried out? Write mechanism.



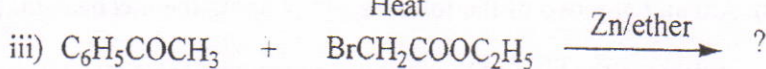
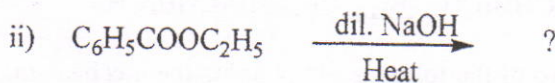
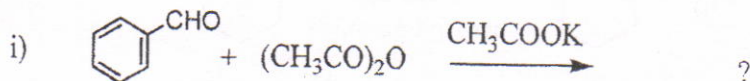
iii) Write two examples of the Sandmeyer reaction. Show mechanism for one.

2 A) Attempt any three giving mechanism, reactants and/or products as needed. [09]

- i) How can 2,3-dimethyl-2-butene be prepared using acetone and -2-bromopropane?
- ii) The mechanism of the reaction of acetaldehyde when heated with aqueous NaOH.



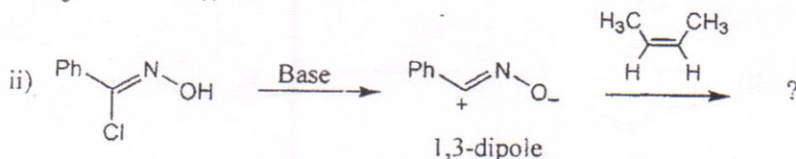
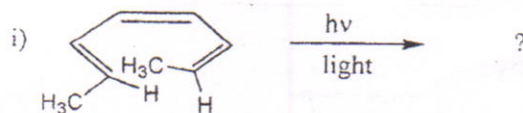
B) Attempt any two of the following giving mechanism. [05]



3 A) Attempt any two of the following. [08]

- i) Construct the correlation diagram for 2+2 cycloaddition of ethylene to give cyclobutane.
- ii) Explain the cycloaddition of ketene to alkene. How does it take place? Explain using FMOs.
- iii) Explain using FMOs that 4+2 cycloaddition takes place under thermal condition and not under photolytic condition.

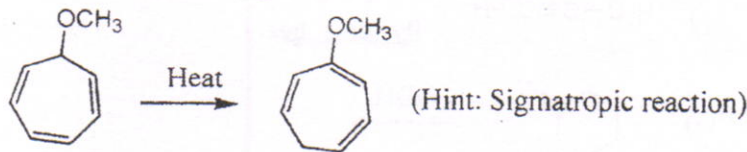
B) Attempt any two of the following **with mechanism**. [06]



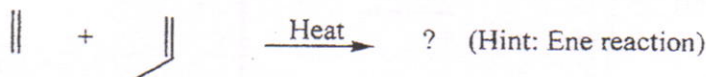
iii) Draw the molecular orbitals for 1,3,5-hexatriene and specify its FMOs in ground state and in excited state.

4 A) Attempt any two of the following giving mechanism. [06]

- Give an example of fluxional molecule. What rearrangement is involved in it?
- Explain the following reaction with mechanism



iii) Explain the following reaction with mechanism



B) Attempt any two of the following: [06]

- What is E1cB mechanism? Explain with an example.
- Discuss the effect of base on elimination reaction.
- Explain the role of solvent on the mechanism of elimination reaction with example.

C) Attempt any one of the following: [02]

- Give differences between E1 and E2 mechanism.
- Give an example of the Hoffmann elimination reaction with mechanism.

5 Complete the following reactions any seven.

[14]

(Mechanism not needed).

