Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **M.Sc.I**
FCYC901

9th Semester Regular Examination 2019-20
ORGANIC CHEMISTRY-VII
BRANCH : M.Sc.I(AC)
Time : 3 Hours
Max Marks : 70
Q.CODE : HR054

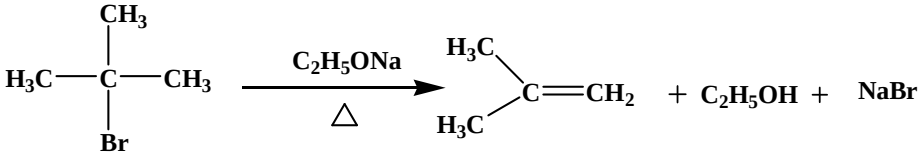
Answer Question No.1 which is compulsory and any FIVE from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions :** **(2 x 10)**

a) "Green Chemistry is sustainable chemistry"- Explain the statement.

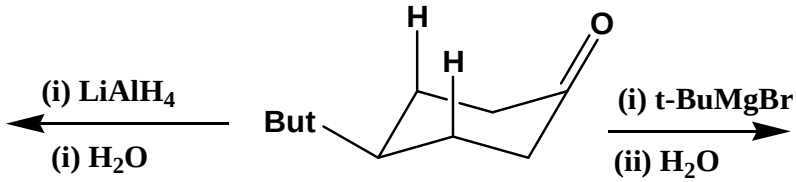
b) Why supercritical CO_2 is important in green chemistry?

c) What is atom economy? Calculate the atom economy of the following reaction



d) What is a Domino reaction? Write its significance?

e) Identify the major and minor products (show the axial and equatorial substitution) in both the cases.



f) "The chiral pool synthesis of L-alanine from L-lactic acid proceeds through retention of configuration at the chiral center"- Comment

g) What is a Chiral Auxiliary? Site an example.

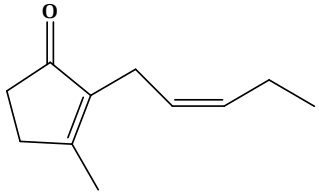
h) Explain chemo selectivity and regio selectivity with suitable examples.

i) Give the mechanism of Negishi coupling.

j) Give an example and discuss the mechanism of of Cu catalyzed cross coupling reaction.

Q2 **a)** Give a brief accounts on the use of Cram and Felkin-Anh models on stereoselective addition to carbonyl group. **(6)**

b) Show the formation of α-nitro anion Umpolung in the synthesis of Jasmone (TM) and discuss its synthesis by retrosynthetic approach. **(4)**

TM = 

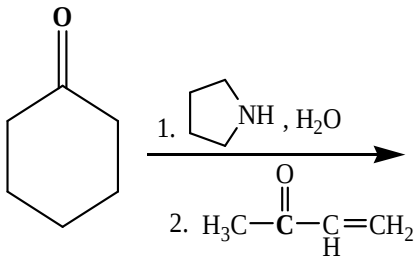
Q3 **a)** Discuss the mechanism of conventional and green approach for the synthesis of the following compounds **(7)**
(i) Ibuprofen
(ii) paracetamol

b) What are green solvents? Site some examples. Discuss the essential criterion for green solvents. **(3)**

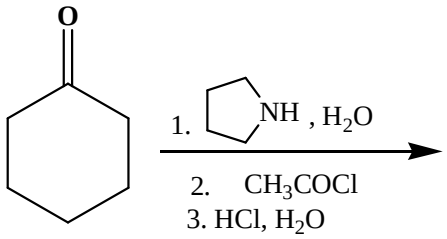
Q4 **a)** Accounts for the kinetic and thermodynamic controlled enolate anion formation and mention the conditions essential in both the cases. **(5)**

b) Identify the products of the following reactions with suitable mechanism **(5)**

(i)

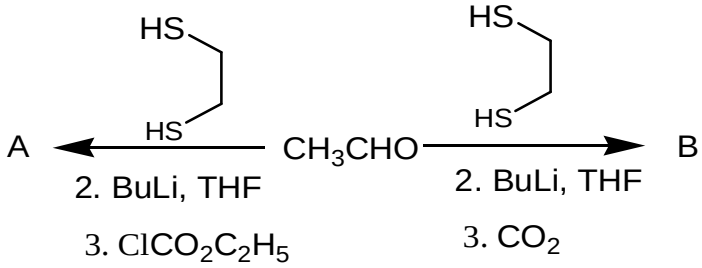


(ii)



Q5 **a)** What is Asymmetric Synthesis? Explain the Chiron Approach to Asymmetric Synthesis. Give the mechanism of chiral pool synthesis of L-glyceraldehyde, the unnatural sugar, from the natural amino acid L-Serine. **(6)**

b) Identify A & B in the following reaction with suitable mechanism. **(4)**



Q6 What is Green Chemistry? What are the objectives of green chemistry? Discuss briefly the twelve principles of green chemistry with proper explanation. **(10)**

Q7 Give a brief account on the total synthesis of Taxol. **(10)**

Q8 Write notes on the following coupling reactions and discuss their mechanism. **(5 x 2)**

a) Suzuki Coupling

b) Sonogoshira coupling