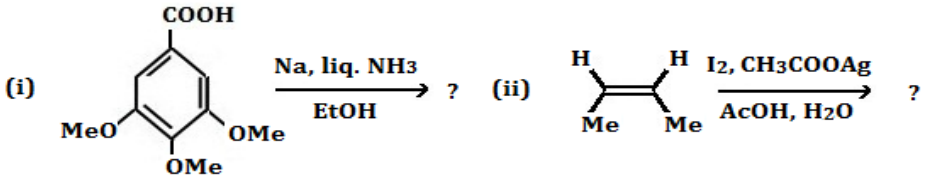
(e) Synthesize the following compound from easily available starting materials by showing retro-synthetic path. (4)

(f) Describe the Felkin-Anh model. (4)

3. Answer any ***two*** questions 2×8 = 16

(a) (I) Write down product with plausible mechanism. (2+2)



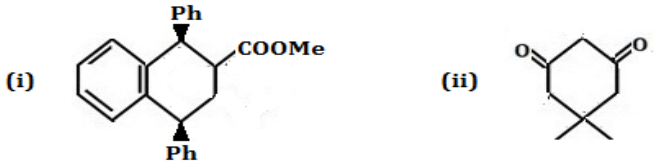
(II) Explain 2-alkyl and 3-alkyl ketone effect with suitable example.4

(b) (i) What is correlation diagram?

(ii) Using correlation diagram show that Diels-Alder reaction is thermally allowed.

(iii) Define regioselectivity. (2+4+2)

(c) Synthesize the following compounds from easily available starting materials by showing retro-synthetic path. (4+4)



(d) (i) Define asymmetric induction.

(ii) Describe the recent Improvements to the Sharpless epoxidation Methodology.

(iii) Draw the most stable conformation of 1,4 dimethyl cyclohexane. (2+4+2)

…….

Internal Assessment-10

2023

M.Sc.

2nd Semester Examination

CHEMISTRY

PAPER – CEM-202

Full Marks: 50

Time : 2 Hours

(CEM 202-Organic Chemistry-II)

1. Answer any ***four*** bits: 2×4 = 8

(a) What do you mean by atropisomerism?

(b) What do you mean by axial chirality?

(c) What is periselectivity? Give an example of periselectivity.

(d) What is betain intermediate?

(e) Give an example of an organic molecule having the characteristic feature stated below.

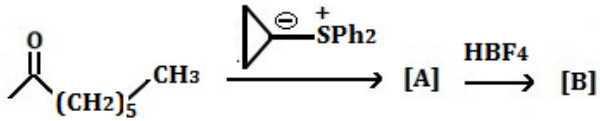
(i) Stereogenic but achirotopiccentre, (ii) Non-stereogenic but chirotopiccentre

(f) What is Bürgi-Dunitz trajectory?

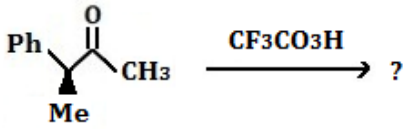
2. Answer any ***four*** bits: 4×4 = 16

(a) Calculate total number of stereoisomers of 3-bromo 2,4pentanediol. Draw all the structures and comment on their optical activity. (1+3)

(b) Identify [A] and [B] and also give mechanism of each step. (4)



(c) Write down the product with mechanism of the following reaction. (4)



(d) Why does the carbanion in case of aromatic ring's Birch reduction pick up a proton at the 6-position to give the 1,4-diene? Why not at the 2-position to give the 1,3-diene? (4)

(Turn over)