BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

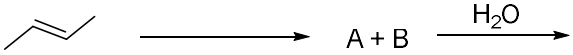
CLASS: IMSC **SEMESTER : IX**
BRANCH: CHEMISTRY **SESSION : MO/19**

SUBJECT: SAC3005 ADVANCED ORGANIC CHEMISTRY

TIME:3:00 HOURS **FULL MARKS: 60**

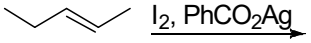
INSTRUCTIONS:
1. The question paper contains 7 questions each of 12 marks and total 84 marks.
2. Candidates may attempt any 5 questions maximum of 60 marks.
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1(a) Draw the epoxidation mechanism using OsO_4 for the following reaction. [6]



Q.1(b) Write a short note on Sharpless oxidation. [6]

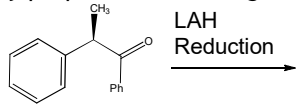
Q.2(a) Identify the product and draw the stepwise mechanism for the following Prevost reaction. [6]



Q.2(b) Write a short note on Dess-Martin Periodinane oxidation. [6]

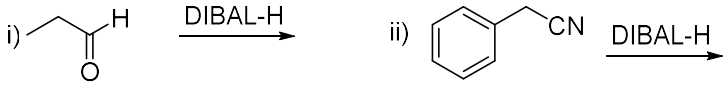
Q.3(a) Describe the significance of prelog's rule for the determination of configuration of chiral alcohol. [6]

Q.3(b) Draw Newmann projection for the formation of major product from $LiAlH_4$ reduction of (R)-1,2-diphenylpropan-1-one through Cram's Model. [6]



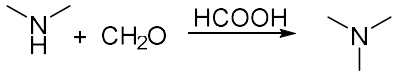
(*R*)-1,2-diphenylpropan-1-one

Q.4(a) Write the stepwise mechanism for the following reduction. [6]

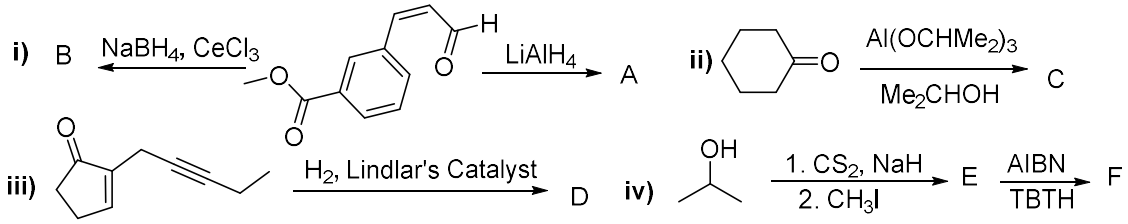


Q.4(b) Discuss the carbenoid mechanism of Clemmensen reduction with a suitable example. [6]

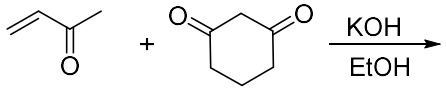
Q.5(a) Write the mechanism of following reaction. [6]



Q.5(b) Write the product formed from following reactions. [6]

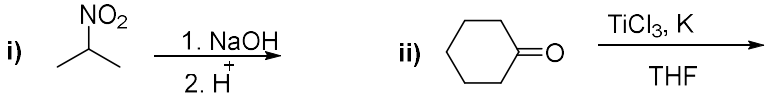


Q.6(a) Write the stepwise mechanism for the following reaction. [6]



Q.6(b) Discuss the mechanism of Mitsunobu coupling with a suitable example. [6]

Q.7 Write stepwise mechanism for the following reaction. [6+6]



::::::02/12/2019::::::E