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Total Number of Pages: 03

MSc. I  
FCYC701

7<sup>th</sup> Semester Regular Examination 2017-18

Organic Chemistry-V

BRANCH: M.Sc.I (AC)

Time: 3 Hours

Max Marks: 70

Q.CODE: B612

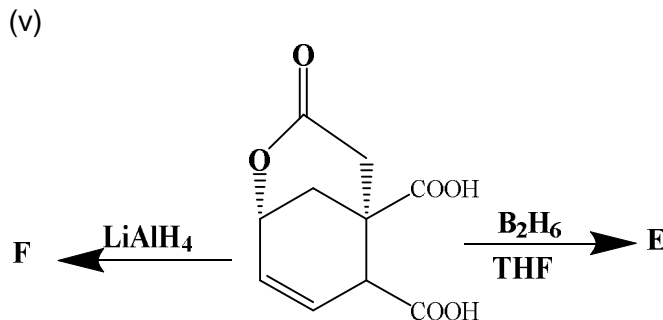
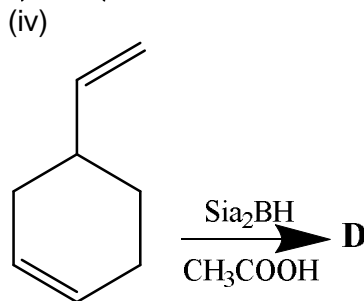
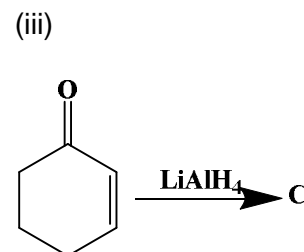
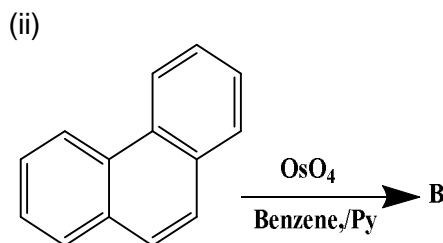
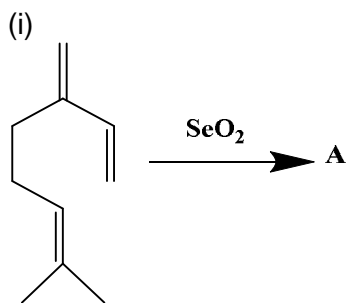
Answer Question No.1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

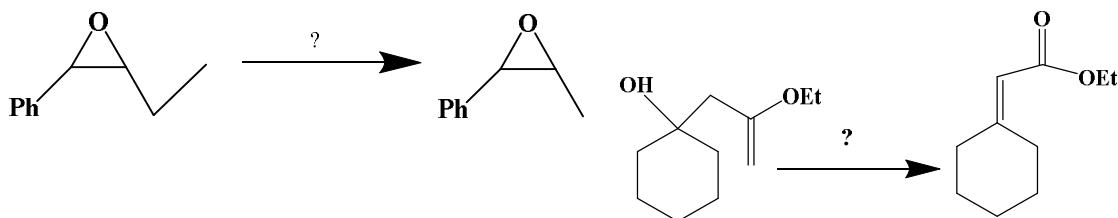
**Q1** Answer the following questions: (2 x 10)

- What is chemoselectivity? Describe one organic reaction citing this concept.
- What is PCC? Give its structure and one application in organic synthesis
- What is Bakers' Yeast? Write one of its applications.
- What is Lindler catalyst? What will happen when but-2-yne treated with Lindler catalyst.
- What is Jones reagent? Write one of its applications.
- Mention the name of the reaction by which you can convert benzene to toluene. Give the mechanism.
- What is Photo reduction? Give an example.
- Starting from a cyclohexanone how can you synthesize caprolactum? Mention the steps
- What is Wurtz reaction? Which alkane cannot be prepared by this reaction and why ?
- What is Luche reduction?

**Q2** a) Identify the products A to F (6)



b) Identify the reagents (2)

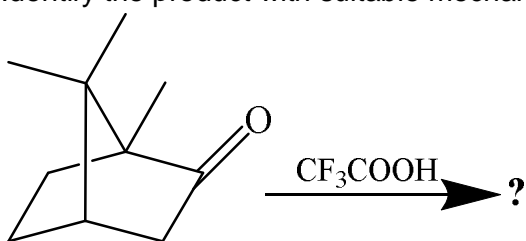


c) Discuss the applications of diborane in organic synthesis. (Any two applications) (2)

Q3 a) What is Bayer-Villiger Oxidation? Give the mechanism of the reaction. Give one of its applications. (5)

b) Discuss the migratory aptitude of different groups for this reaction. (2.5)

c) Identify the product with suitable mechanism. (2.5)



Q4 Write short notes on the following

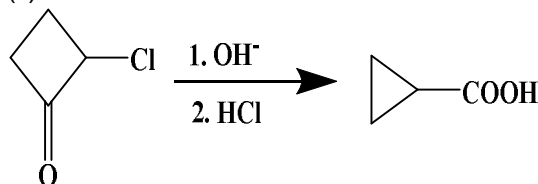
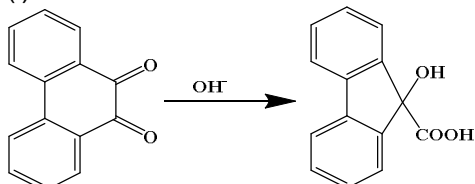
a) Favorski Rearrangement (3)

b) Beckmann Rearrangement (3)

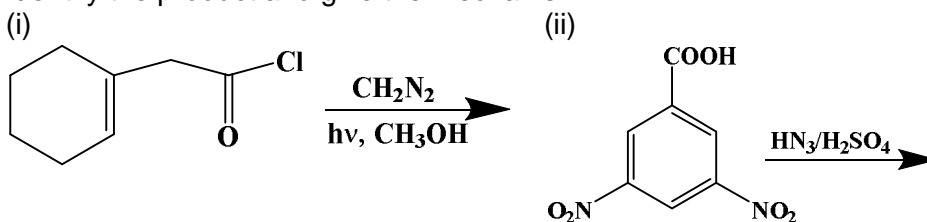
c) Benzil-Benzilic acid rearrangement (4)

Q5 Suggest the mechanism for the following reactions. (4)

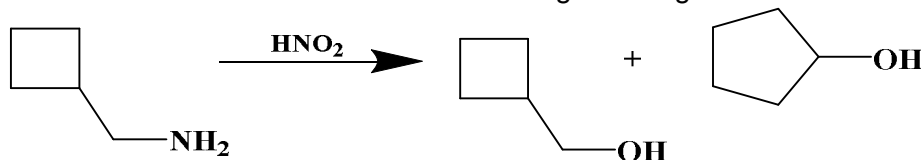
a) (i) (ii) (4)



b) Identify the product and give the mechanism. (4)

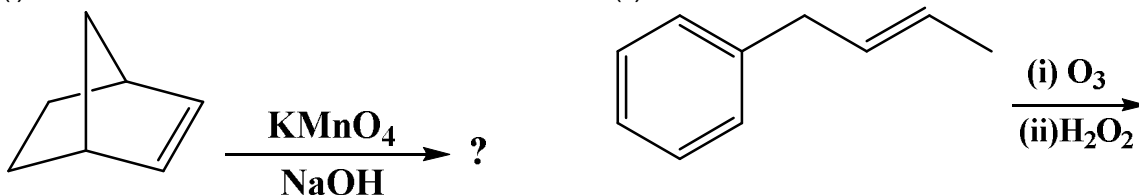


c) Give a suitable mechanism for the following rearrangement. Name the rearrangement. (2)



- Q6** a) What is catalytic hydrogenation reaction? (6)  
 Explain catalytic hydrogenation of alkene and alkynes with suitable mechanism.
- b) Draw the energy diagram for an alkene undergoing hydrogenation reaction in the absence and presence of a catalyst. (2)
- c) What will happen when but-2-yne undergoes reaction with Na/Liq.  $\text{NH}_3$  and Lindlar catalyst? (2)

- Q7** a) What is DCC? Discuss any two applications of DCC as a dehydrating agent in organic synthesis (4)
- b) Identify the products with suitable mechanism (4)



- c) Identify the products (2)



- Q8** a) Discuss the conditions and mechanism of Cannizzaro and aldol condensation reactions with proper explanation. (5)
- b) What is Fries rearrangement? Discuss the inter-molecular and intra-molecular mechanism for this rearrangement with a suitable example. (5)