

Please check whether you have got the right question paper.

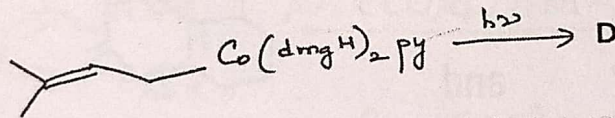
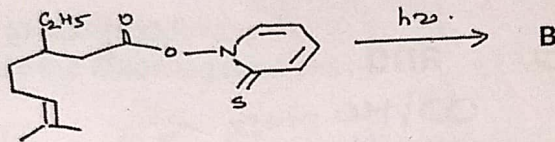
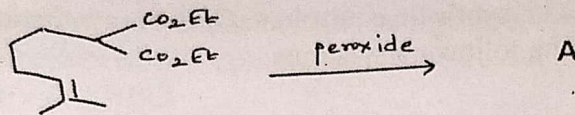
- N.B:
1. All questions are compulsory
 2. Figures to the right indicate full marks

Q.1

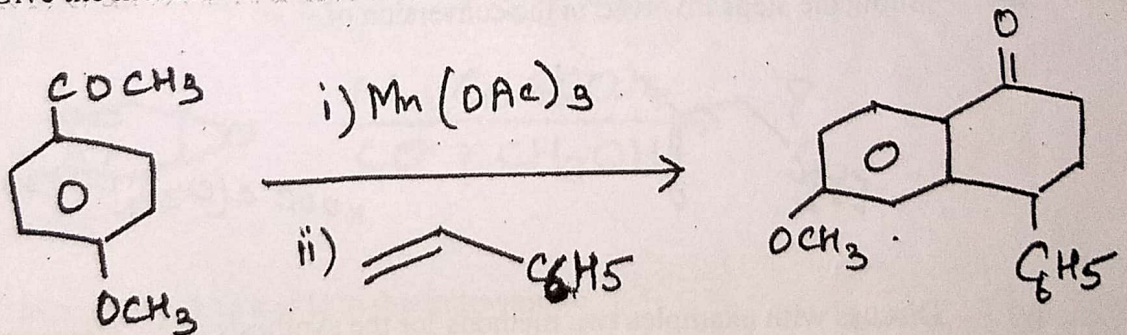
08

a) Attempt any Two of the following:

i) Complete the following reactions and identify A, B, C and D

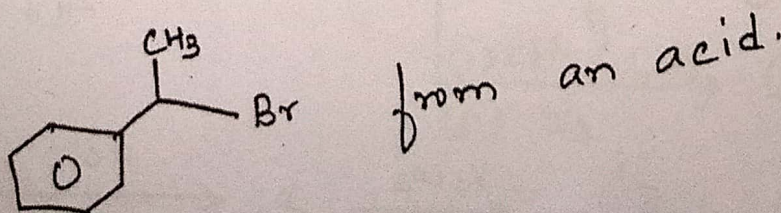


ii) Give the mechanism for the following reaction



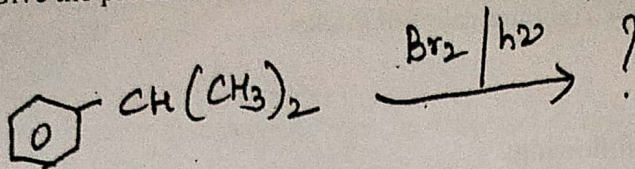
iii) Discuss with examples the generation of radicals by C – Sn bond cleavage

iv) How would you synthesise the following using a radical reaction? Give the reaction and name the reaction involved.



b) Attempt any One of the following :

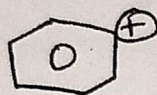
- Discuss with suitable examples radical mediated carbon-carbon bond formation in aromatic compounds
- Give the product and mechanism of the following reaction



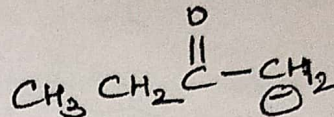
Q.2

a) Attempt any Two of the following:-

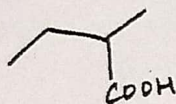
- Explain synthon and synthetic equivalent. Give the synthetic equivalent corresponding to the following synthons



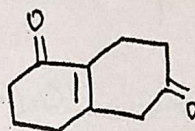
and



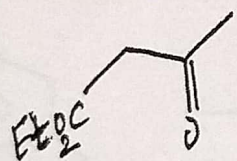
- Provide a retrosynthesis for the following



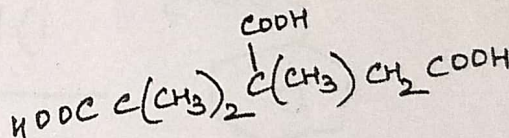
and



- Show the steps involved in the conversion of



to

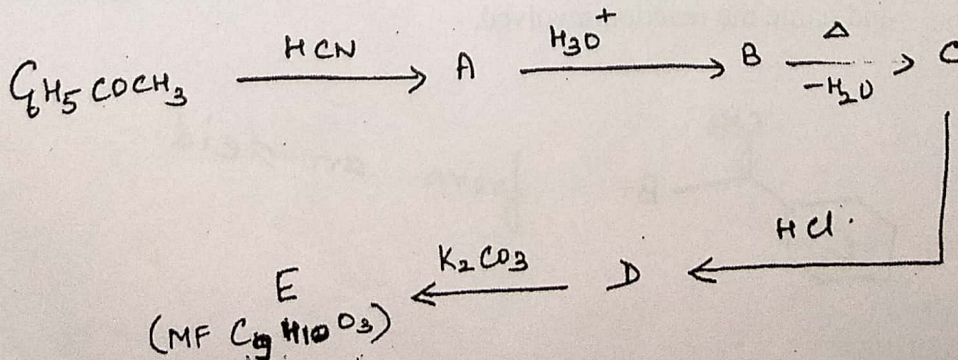


to

- Discuss with examples two methods for the synthesis of six membered cyclic compounds

b) Attempt any One of the following :-

- Identify the missing intermediates A-E



- ii) Explain the following with an example
 Convergent synthesis
 Target molecule

Q.3

- a) Attempt any Two of the following :-
- Discuss the principle and applications of ultrasound assisted organic reactions.
 - What are the advantages offered by polymer supported reagents? Illustrate
 - Give a brief account of applications of cryptands in organic synthesis
 - What are micelles? How do they enhance rate of reaction?

08

- b) Attempt any One of the following: -

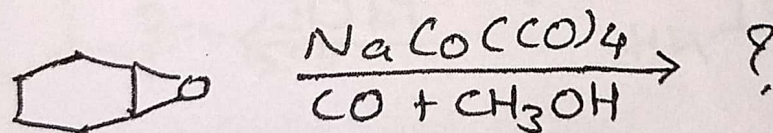
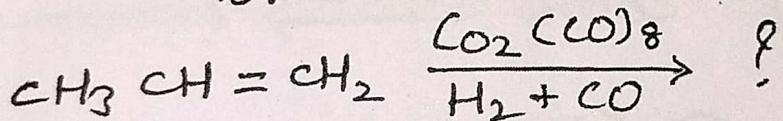
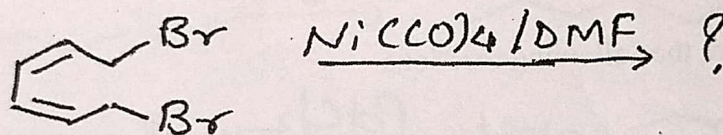
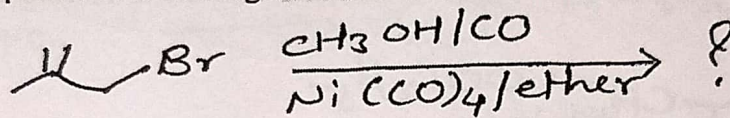
- Illustrate four applications of clay in organic synthesis
- Give structure of α - cyclodextrin. How does it help in selective chlorination of anisole using HOCl

04

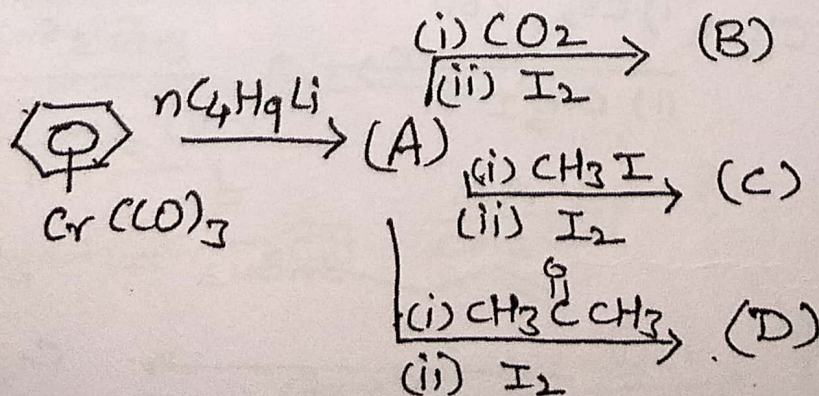
Q.4

- a) Attempt any Two of the following:-
- Complete the following reactions :-

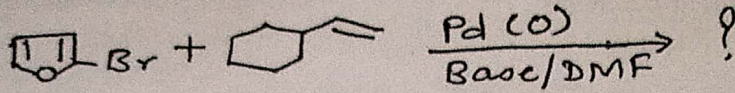
08



- ii) Identify A, B, C and D in the following:-



iii) Complete the following reaction and explain its mechanism



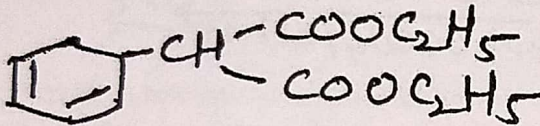
iv) Explain the following terms with suitable examples:-
Oxidative addition
Migratory insertion

b) Attempt any One of the following

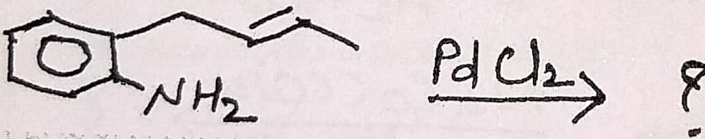
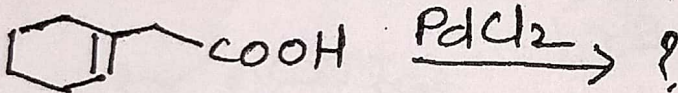
i) Give the applications of $Yb(OTf)_3$ as a water tolerant Lewis acid catalyst in the following reactions:-
Diels Alder reaction
Aldol condensation
Friedel Crafts reaction
Michael reaction

04

ii) Give conversion of 1,3-cyclohexadiene into the following compound using iron carbonyl



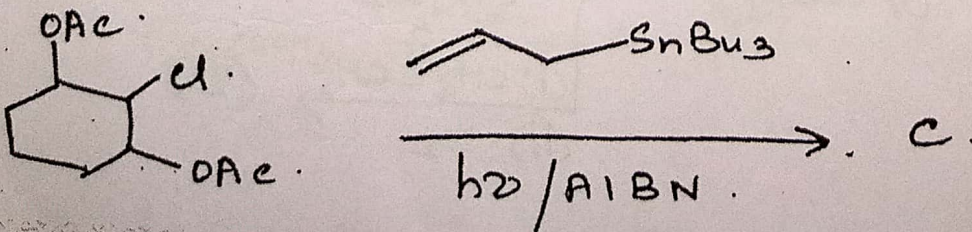
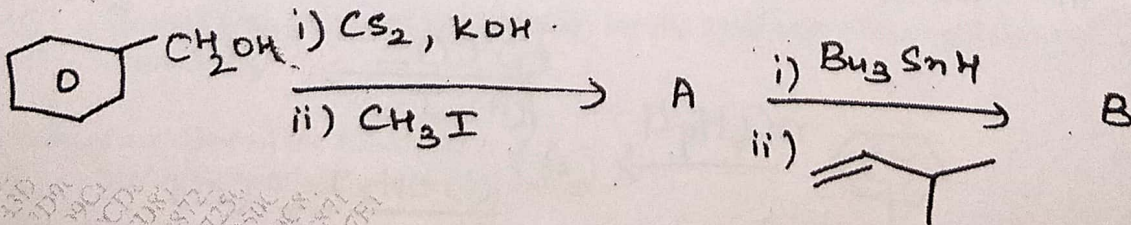
Complete the following reactions



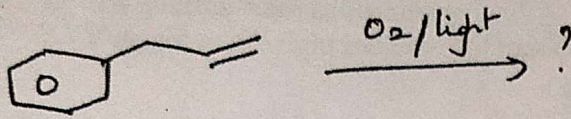
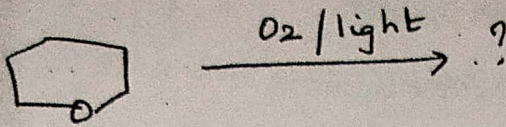
Q.5 Attempt any Four of the following:

a) Complete the following reactions

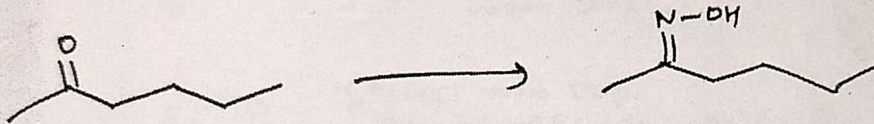
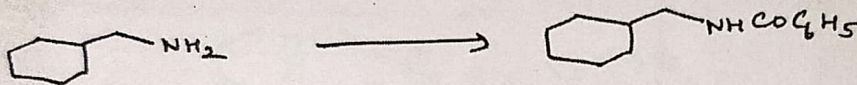
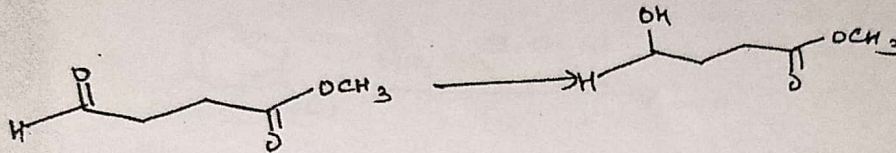
12



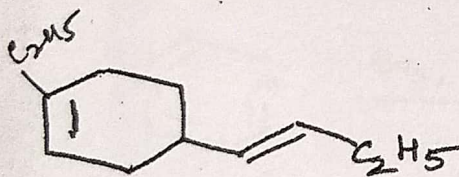
b) Explain autoxidation. Give the product of autoxidation of the following



c) Suggest reagents to bring about the following transformations



d) Provide a retrosynthesis for the following compound



e) Write three advantages of zeolites in organic synthesis

f) Discuss with mechanism, reaction of benzyl chloride with NaCN using phase transfer catalyst

g) Discuss is 18 electron rule? Applying this rule determine the value of n in the following:



h) Complete the following reactions

