

This question paper contains 8 printed pages]

AY—192—2018

FACULTY OF SCIENCE

M.Sc. (Second Year) (Fourth Semester) EXAMINATION

MARCH/APRIL, 2018

(CBCS Pattern)

ORGANIC CHEMISTRY

Paper (CH-543/2)

(Organic Synthesis—II)

(Monday, 16-4-2018)

Time : 2.00 p.m. to 5.00 p.m.

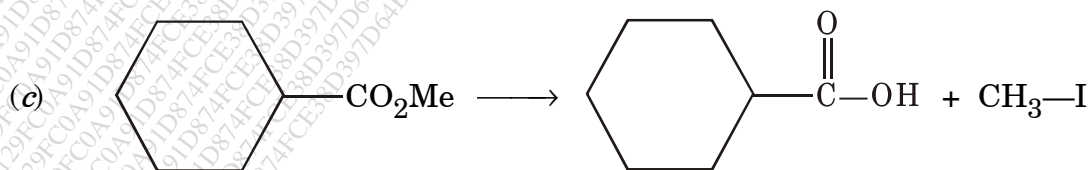
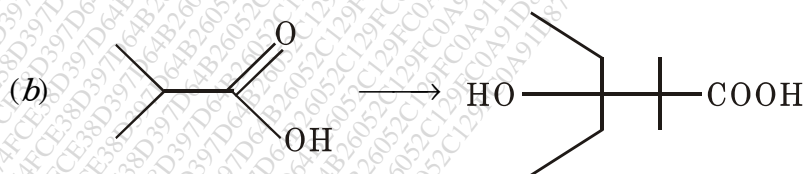
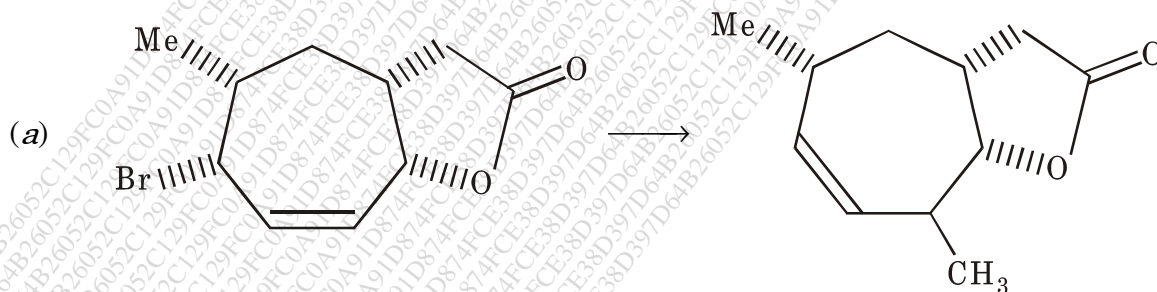
Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

1. Suggest the suitable reagents for the following conversions (any *three*) : 15

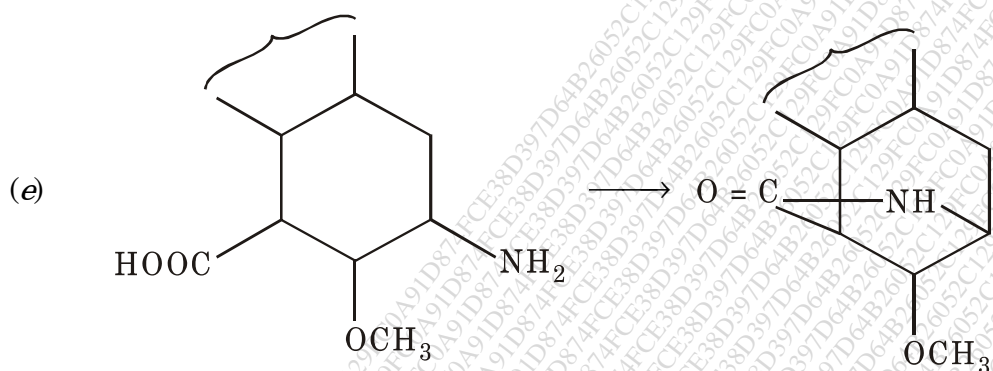
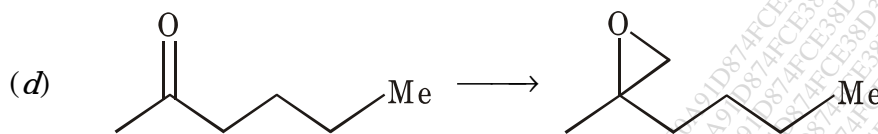


P.T.O.

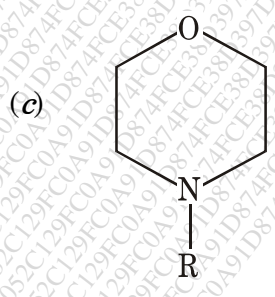
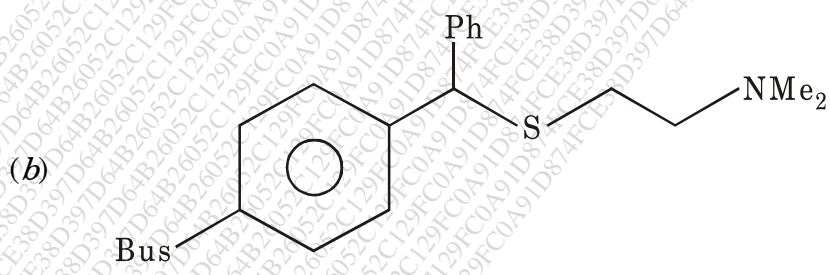
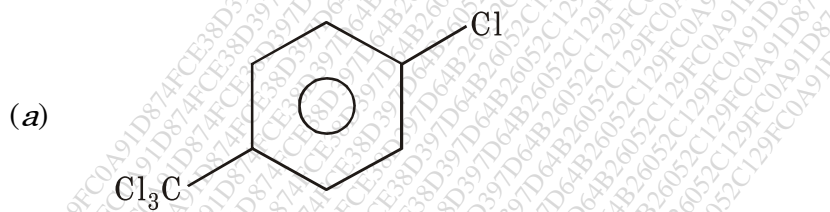
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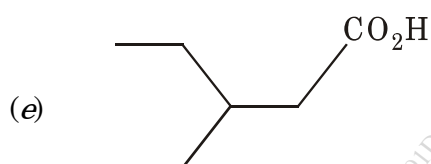
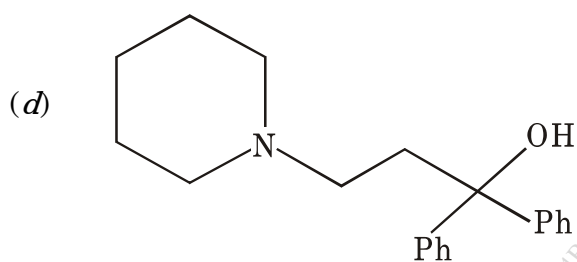
(2)

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2. Using Retrosynthesis suggest suitable method for the synthesis of the following (any *three*) : 15





3. Solve the following :

(a) Explain with suitable example :

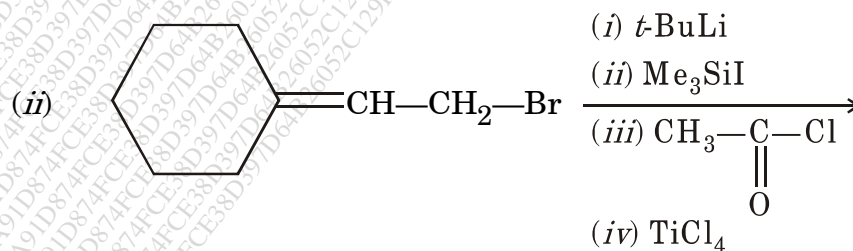
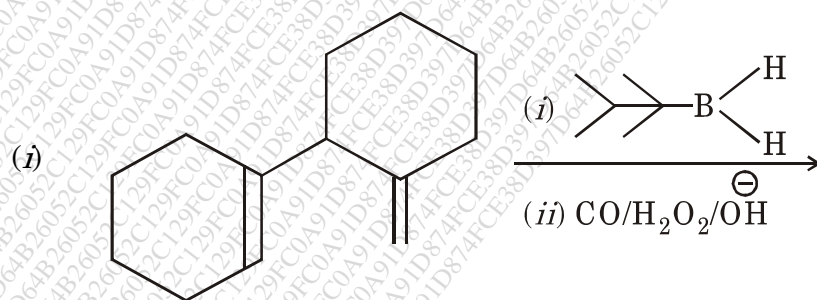
8

(i) Umpolung concept

(ii) Concepts of protecting functional group.

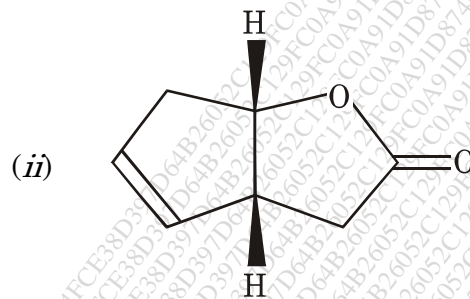
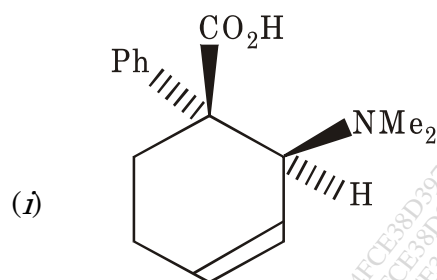
Or

Predict the product with mechanism :



P.T.O.

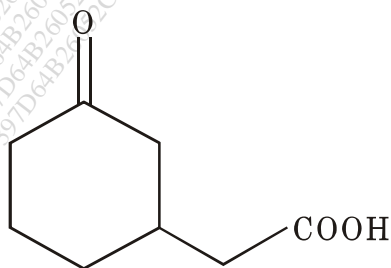
- (b) Using Retrosynthesis suggest suitable method for the synthesis of the following : 7



Or

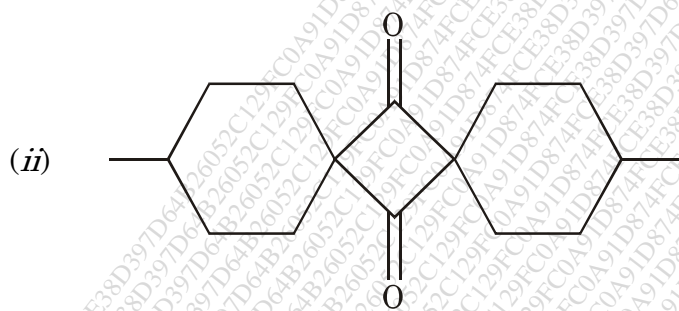
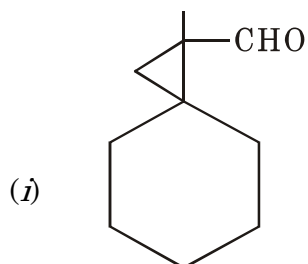
Solve the following :

- (i) Explain with examples synthesis of five members aromatic heterocyclic rings.
- (ii) Explain the synthesis of the following target molecule using Micheal addition reaction :



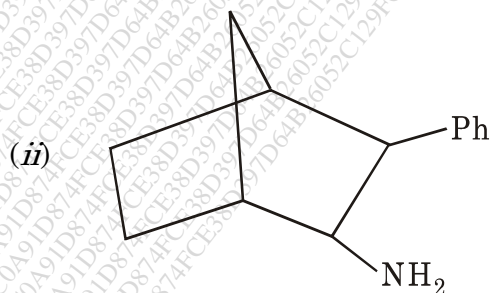
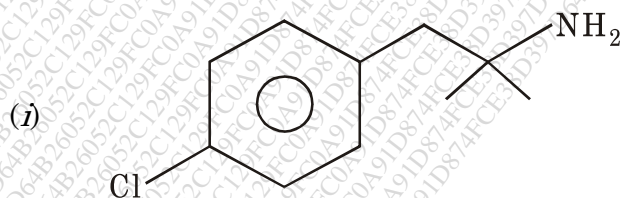
4. Solve the following :

(a) How will you synthesize the following compounds using Ketens : 8



Or

How will you synthesize the following target molecules using aliphatic nitrocompounds :



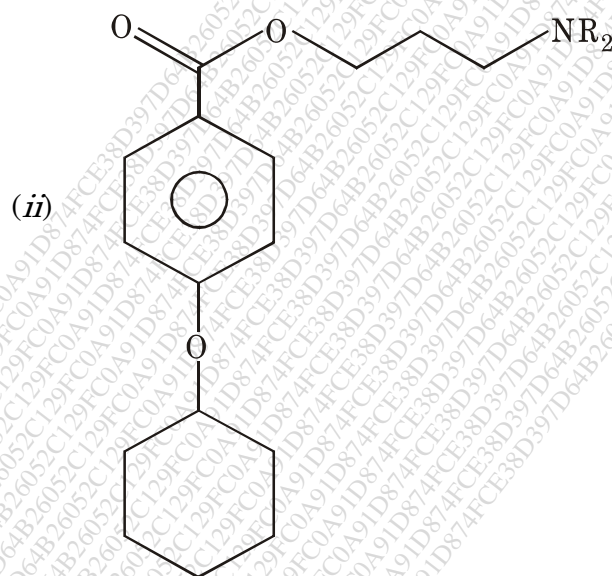
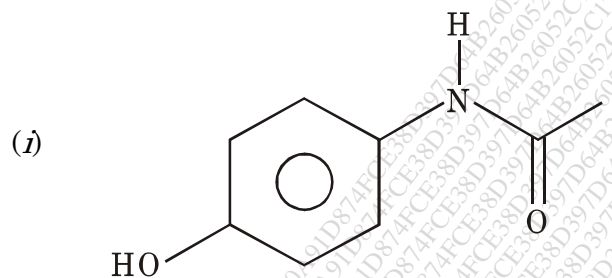
P.T.O.

(b) Describe the synthesis of Vitamin-D₂.

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Or

Using the concept of chemoselectivity how will you synthesize the following compounds :



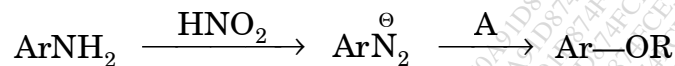
5. (A) Select the *correct* answer from the following alternatives :

5

(i) LDA is :

- (a) Poor nucleophile
- (b) Strong base
- (c) Strong nucleophile
- (d) Both (a) and (b)

(ii) In the following conversion 'A' is :

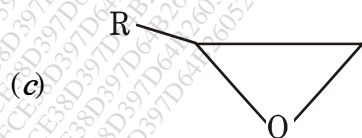
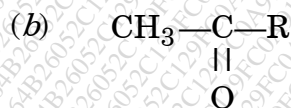


- (a) H_2O
 (b) CuCN
 (c) ROH
 (d) CuCl

(iii) Enamines are prepared for the protection of :



(iv) The synthon $\begin{array}{c} \oplus \\ | \\ \text{R}-\text{C}-\text{OH} \end{array}$, its synthetic equivalent is :



(d) None of the above

P.T.O.

- (v) 1, 5-difunctionalized compounds on disconnection gives :
- (a) Michael acceptor
 - (b) Epoxide
 - (c) Aldehyde
 - (d) Carboxylic acid
- (B) Write short notes on any *two* : 10
- (i) Lead tetra-acetate
 - (ii) Two group disconnection in Diels-Alder Reaction
 - (iii) Synthesis of six member rings.