

This question paper contains 7 printed pages]

BR—232—2016

FACULTY OF SCIENCE

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

NOVEMBER/DECEMBER, 2016

(CBCS Course)

ORGANIC CHEMISTRY

Paper XXVII (CH-533/2)

(Organic Synthesis—I)

(Monday, 21-11-2016)

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

Time—Three Hours

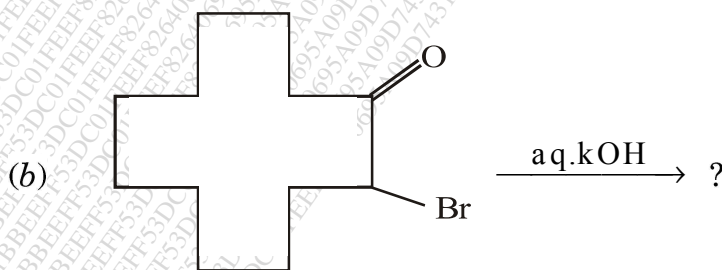
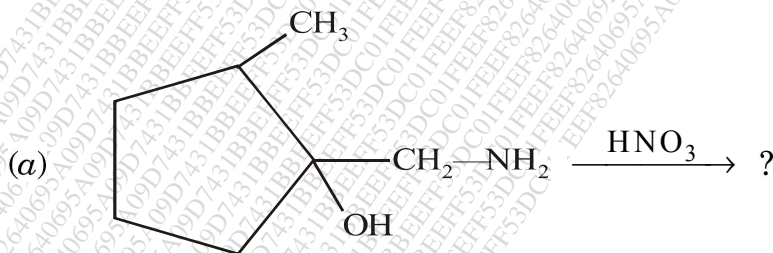
Maximum Marks—75

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

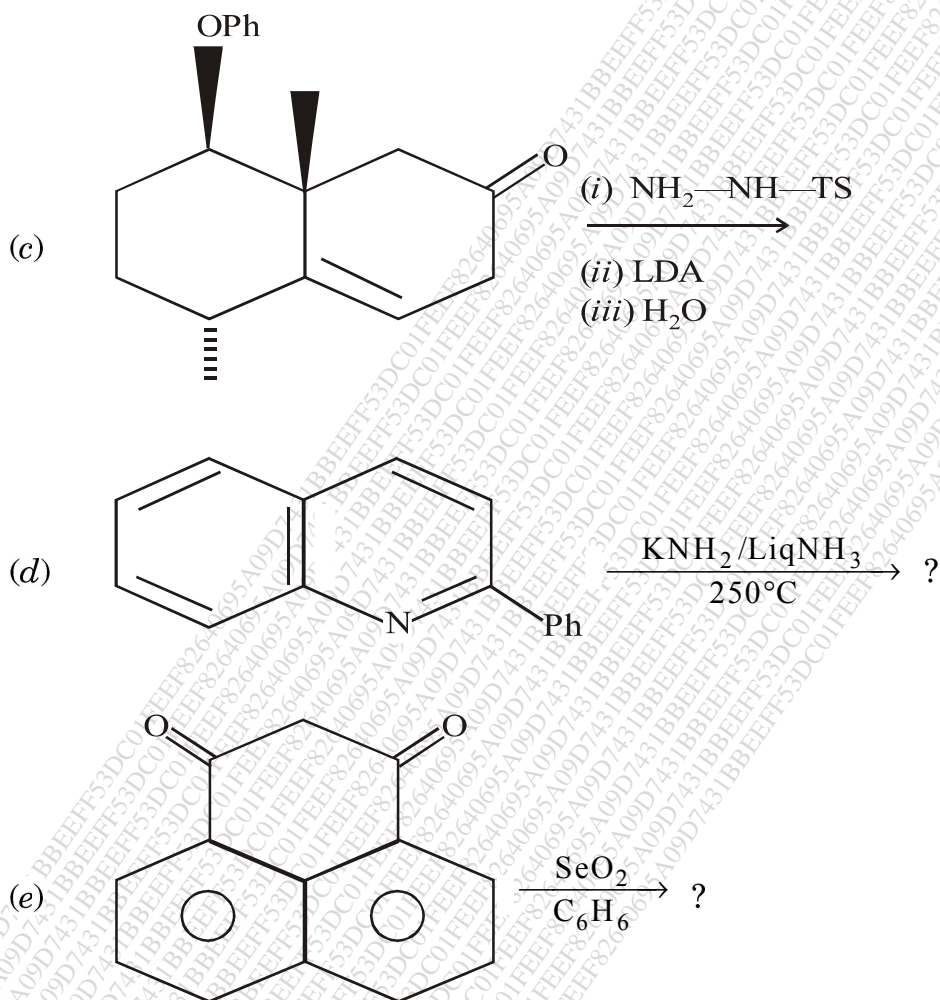
(ii) Figures to the right indicate full marks.

1. Predict the product with mechanism (any *three*) :

15

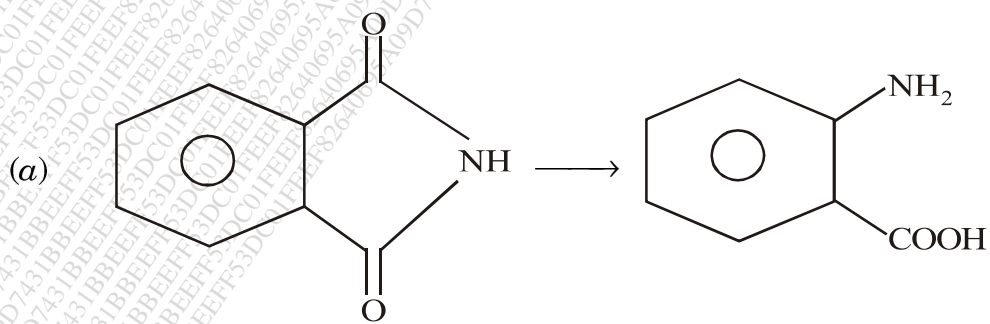


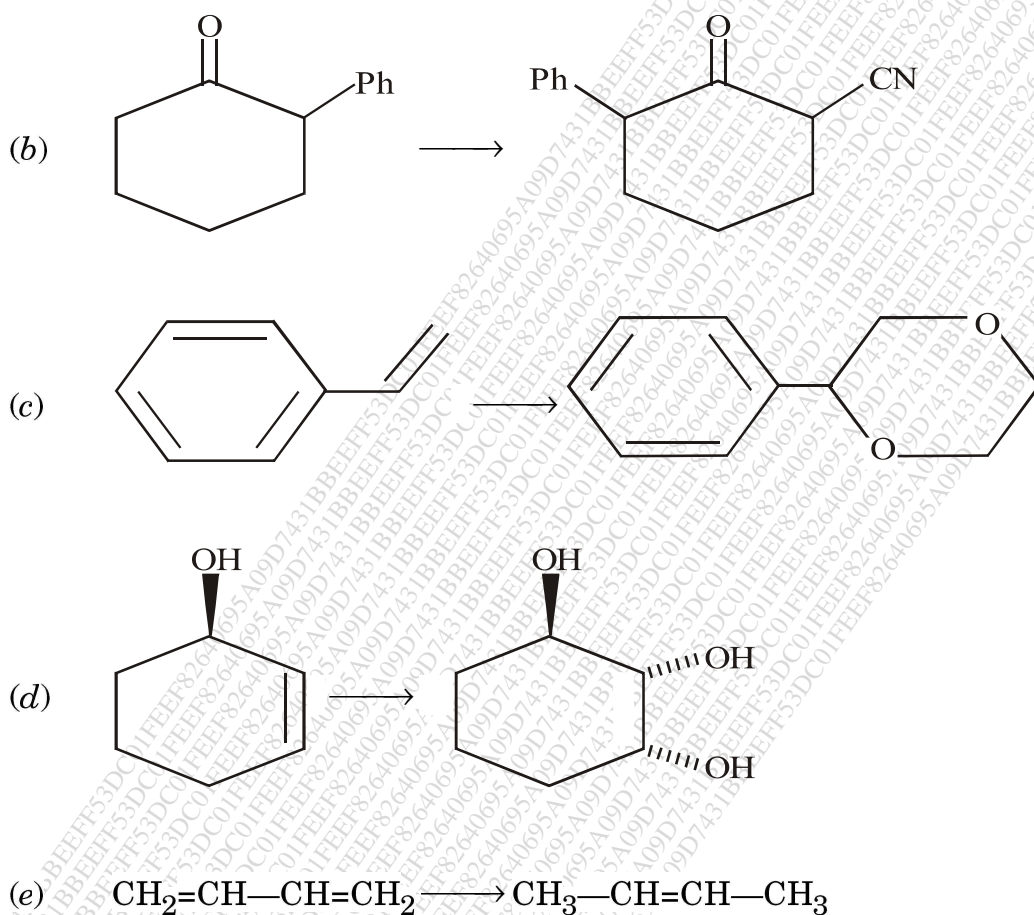
P.T.O.



2. Select suitable reagents for the following conversion and give appropriate mechanism (any *three*) :

15





3. Solve the following :

8

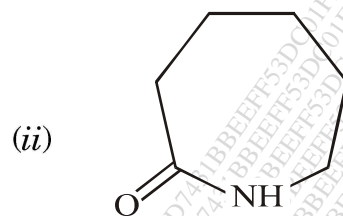
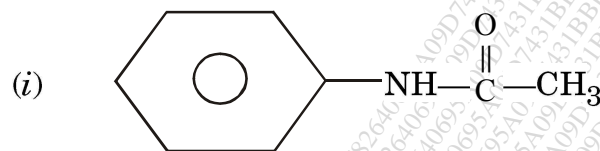
(a) Discuss mechanism, stereochemistry and synthetic application of Woodward-Prevost hydroxylation.

Or

Give the mechanism and synthetic application of Ullman reaction.

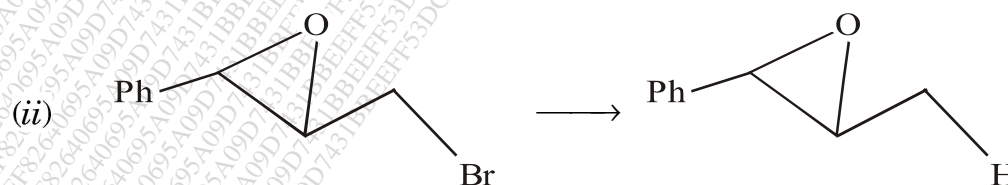
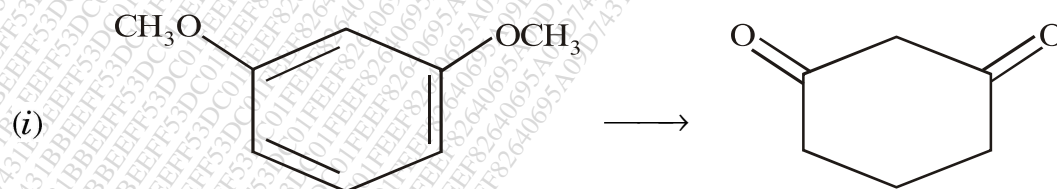
P.T.O.

- (b) Show how a Schmidt rearrangement might be used in synthesis each of the following compounds with mechanism : 7



Or

- Select suitable reducing agents for the following conversion with mechanism :



4. (a) Explain the following with mechanism :

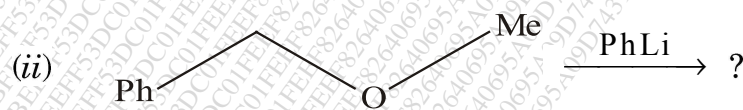
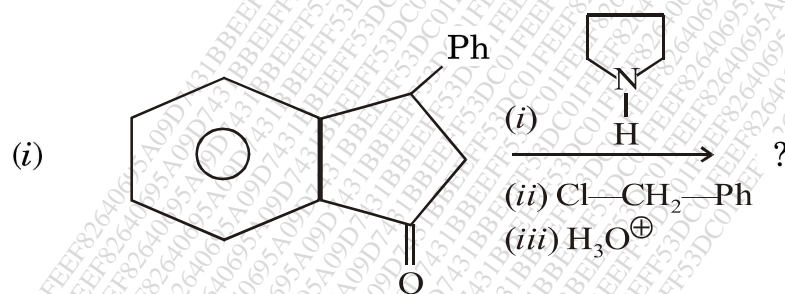
8

(i) Beckmann rearrangement is stereospecific.

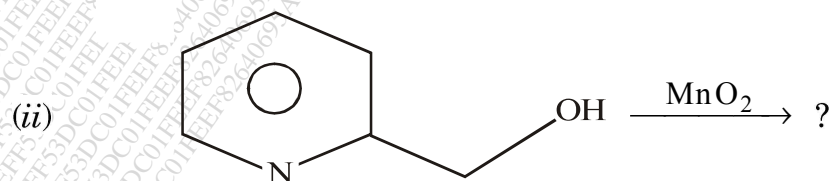
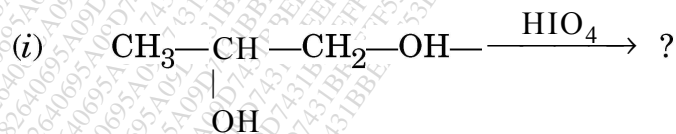
(ii) Wilkinson's catalyst is an example of homogeneous hydrogenation.

Or

- (i) Fural in presence of alkali gives furilic acid.
- (ii) AlH_3 is act as electrophilic metal hydride reducing agents.
- (b) Predict the product of the following with suitable mechanism : 7



Or



P.T.O.

5. (A) Select and write the correct answer of the following choices : 5

- (i) BH_3 is an example of reagent.
- (a) Nucleophilic (b) Electrophilic
(c) Free radical (d) All of these
- (ii) DD_9 is applicable for
- (a) Dehydrogenation (b) Insertion of oxygen
(c) Aromatisation (d) All of these
- (iii) Diimide reduction is applicable for which of the following double bond :
- (a) >C=N- (b) >C=O
(c) -N=N- (d) -C=S
- (iv) Chichibabin reaction is an example of
- (a) Addition (b) Substitution
(c) Elimination (d) Both (a) and (c)
- (v) Steven's rearrangement is an example of rearrangement.
- (a) Electrophilic (b) Nucleophilic
(c) Free radical (d) None of these

(B) Write notes on any *two* :

10

- (a) Use of Tri-n-butyl tinhydride
- (b) Periodic acid
- (c) Arndt eisterts synthesis.