

This question paper contains 6 printed pages]

L—152—2019

FACULTY OF SCIENCE

M.Sc. (Third Semester) EXAMINATION

MARCH/APRIL, 2019

(CBCS Pattern)

ORGANIC CHEMISTRY

CH-533/2

(Organic Synthesis—I)

(Friday, 26-4-2019)

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

Time—3 Hours

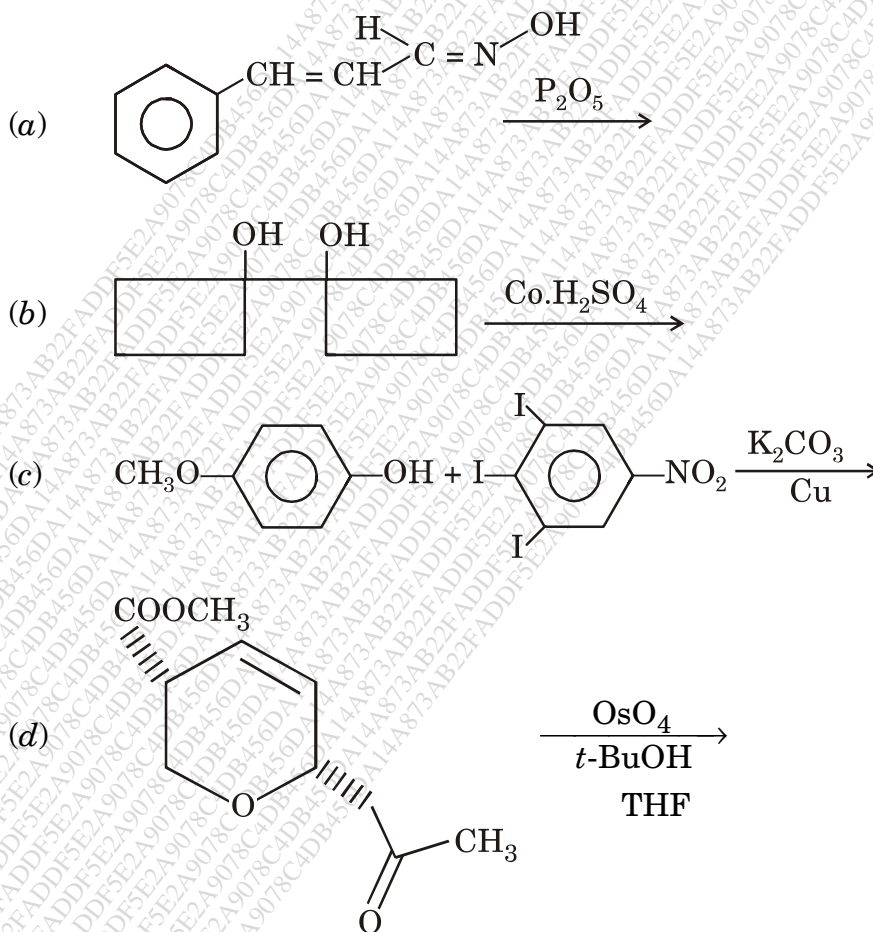
Maximum Marks—75

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

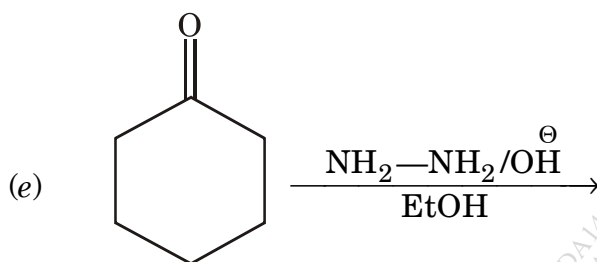
(ii) Figures to the right indicate full marks.

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

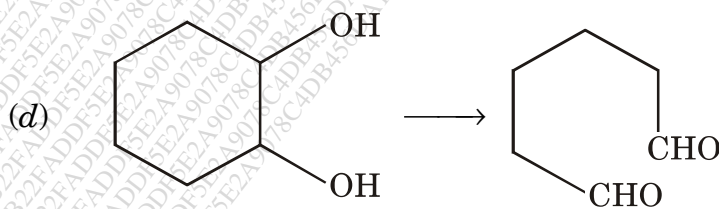
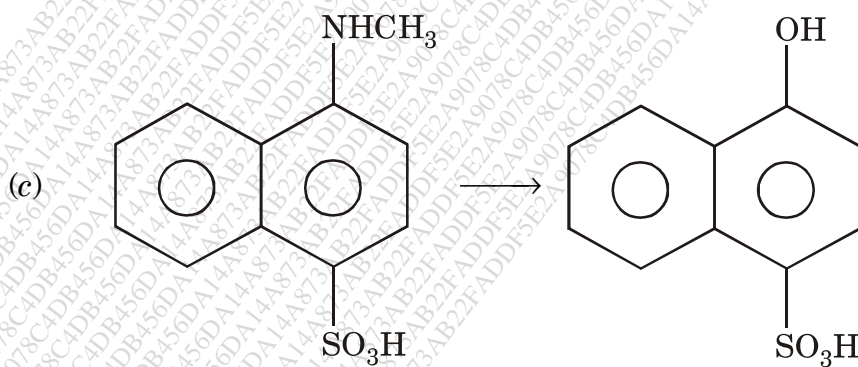
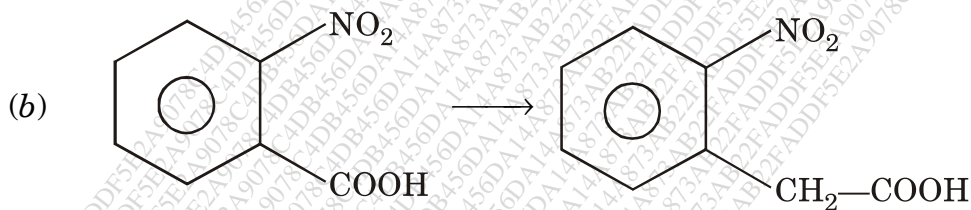
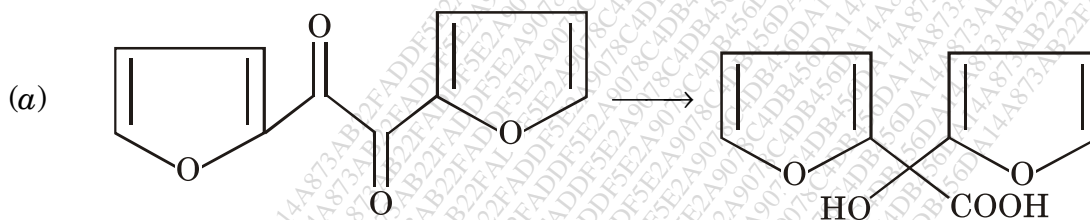
15

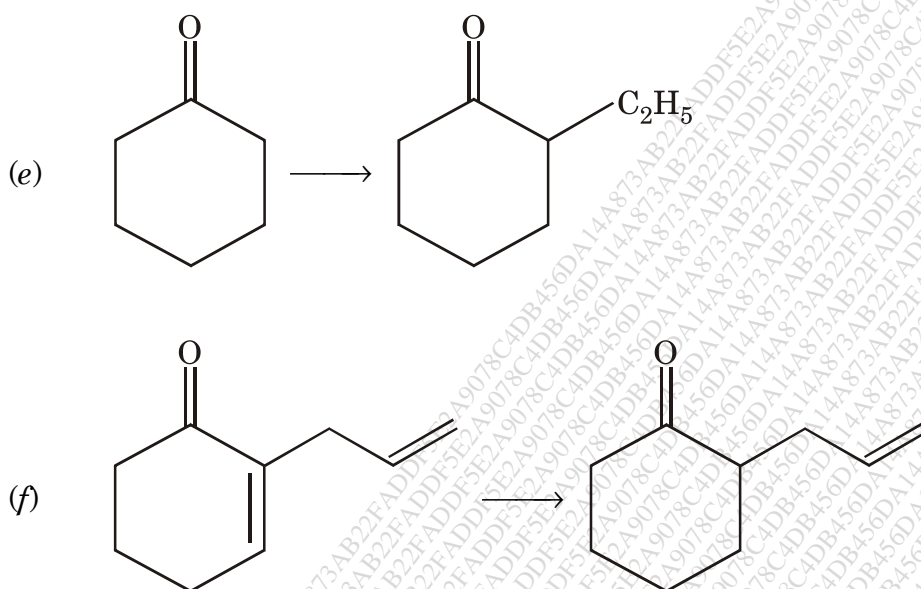


P.T.O.



2. Select suitable reagent for the following conversion and give appropriate mechanism : 15





3. Solve the following :

(A) Discuss the following giving suitable example with mechanism : 8

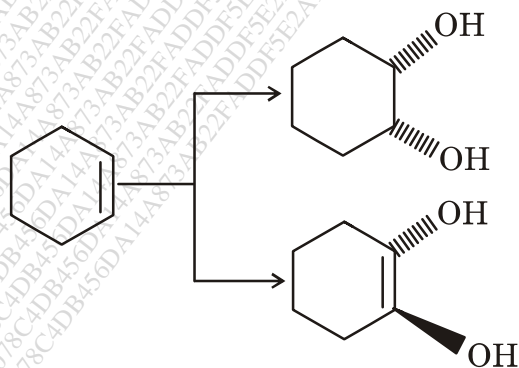
(i) Hofmann rearrangement

(ii) Barton reaction.

Or

(i) Discuss Clemmensen and Wolff Kishner reduction.

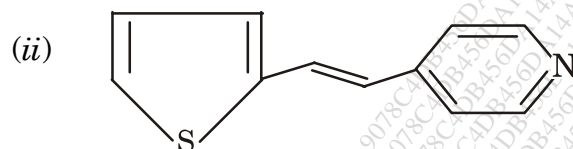
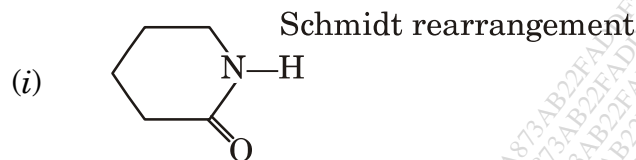
(ii) How will you bring out the following conversion with mechanism.



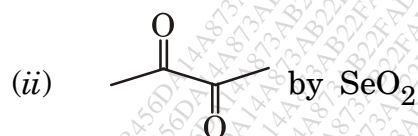
P.T.O.

(B) How will you prepare the following using :

7



Or



4. Solve the following :

(a) Discuss the following with suitable example :

(i) Fries rearrangement

(ii) Oxidation of Carbonyl compounds using SeO_2 .

Or

Discuss the following giving suitable example with mechanism :

(i) Pinacol-pinacolone rearrangement

(ii) BH_3 is an electrophilic metal hydride reducing agent. 8

(b) Explain the following :

(i) Beckmann rearrangement take place migrating migration group anti to leaving group.

(ii) Di-imide gives cis hydrogenation of symmetrical unsaturation. 7

Or

Explain :

- (i) OsO_4 gives cis hydroxylation
- (ii) Oxidative cleavage of 1, 2, diol using periodic acid.

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

- (i) α -Haloketones are treated with alkoxide to form ester is called :
 - (a) Benzillic acid rearrangement
 - (b) Semibenzillic acid
 - (c) Curtius rearrangement
 - (d) Favorskii rearrangement
- (ii) Neber rearrangement involves the formation of intermediate :
 - (a) Carbocation
 - (b) Carbanion
 - (c) Nitrene
 - (d) Aziridine
- (iii) Reduction of alkynes with Na/liq NH_3 gives :
 - (a) Z-olefins
 - (b) E-olefins
 - (c) Both (a) and (b)
 - (d) None of the above
- (iv) For trans hydroxylation method is used.
 - (a) Prevost
 - (b) Woodward
 - (c) KMnO_4
 - (d) OsO_4

P.T.O.

- (v) Carbonyl reduction to methylene using Zn-Hg/HCl is :
- (a) Wolff Kishner
 - (b) Clemmensen
 - (c) M.P.V.
 - (d) None of the above
- (B) Write short notes on the following : 10
- (i) Birch reduction
 - (ii) Suzuki coupling
 - (iii) Wolf rearrangement