

This question paper contains 4+2 printed pages]

AI—190—2017

FACULTY OF SCIENCE

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

MARCH/APRIL, 2017

(CBCS Pattern)

ORGANIC CHEMISTRY

Paper XVII (CH-533/2)

(Organic Synthesis)

(Tuesday, 25-4-2017)

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

Time— Three Hours

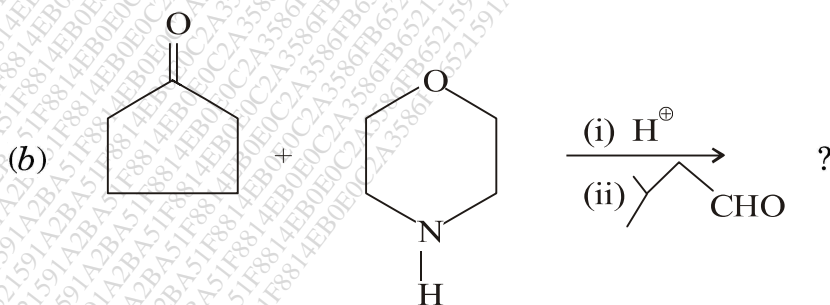
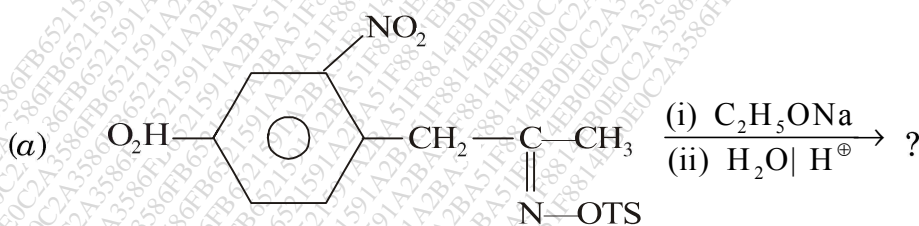
Maximum Marks—75

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

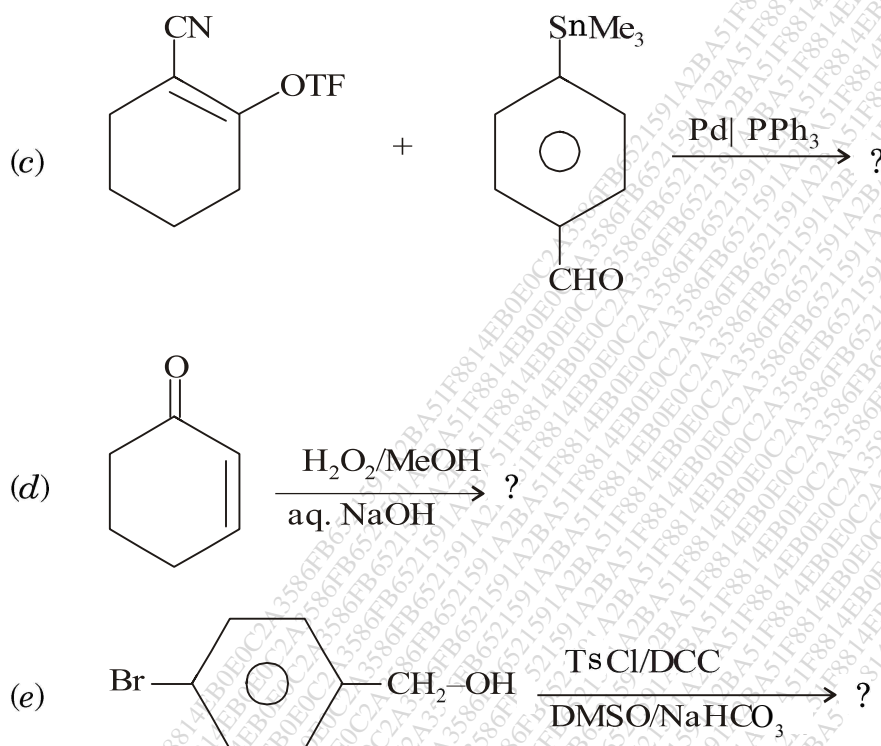
(ii) Figures to the right indicate full marks.

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

15

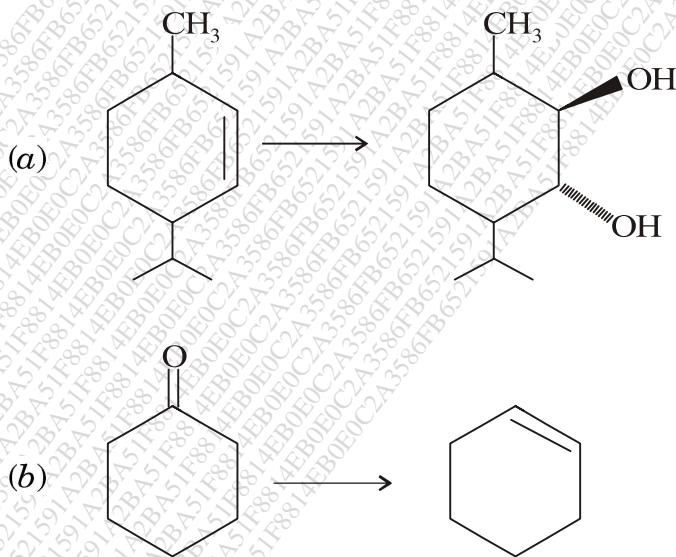


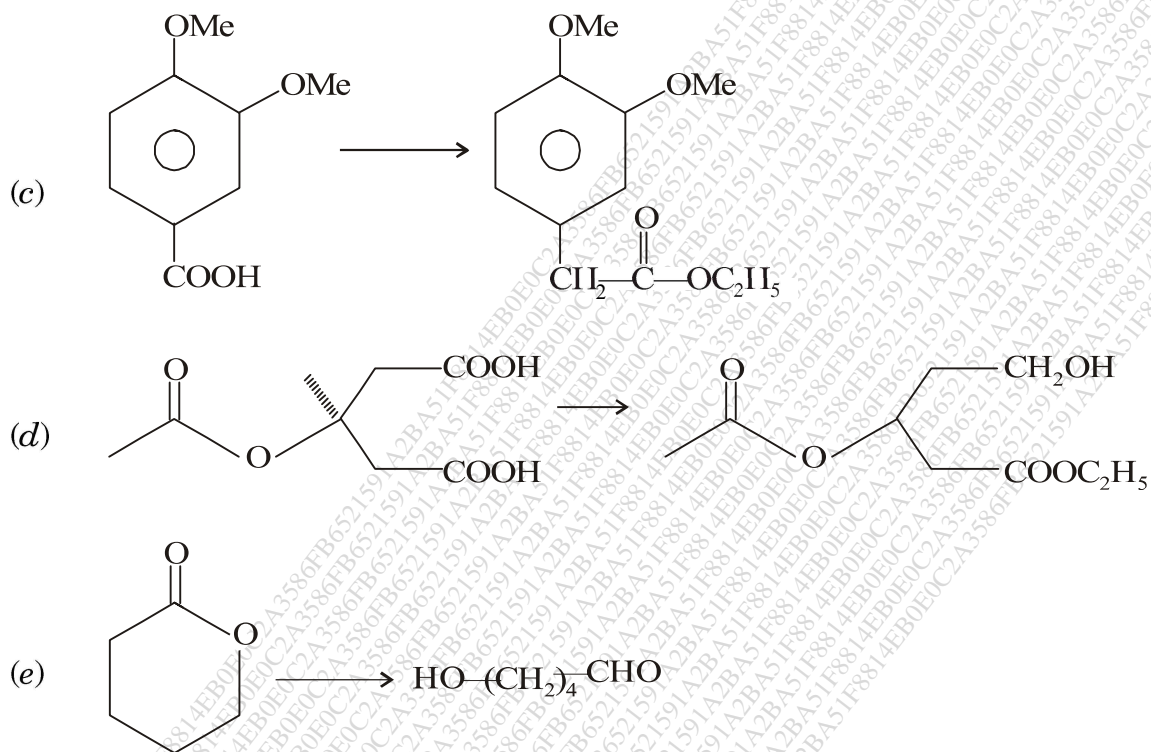
P.T.O.



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

15





3. Solve the following :

(a) Discuss the following giving suitable example with mechanism :

(i) Wittig rearrangement

8

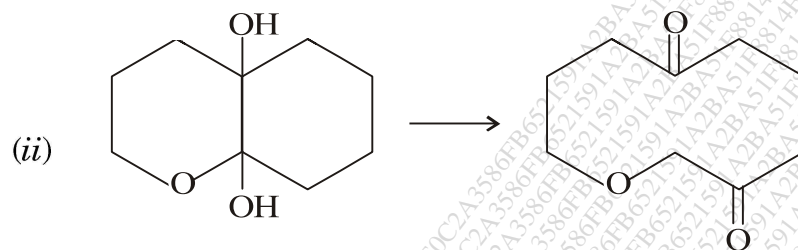
(ii) Prins reaction.

Or

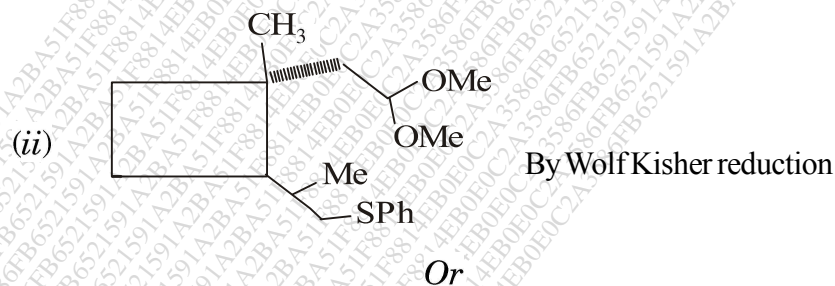
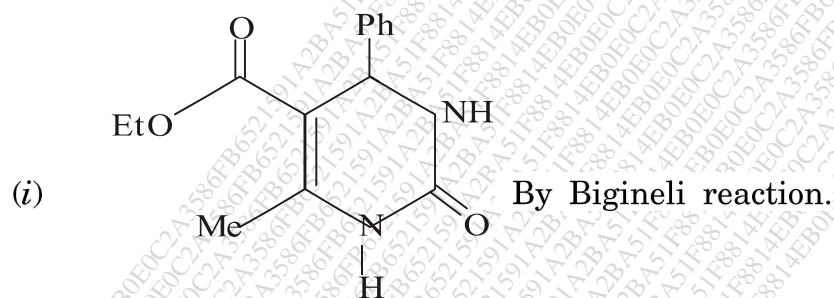
Use suitable reagent for the following conversions with mechanism :



P.T.O.

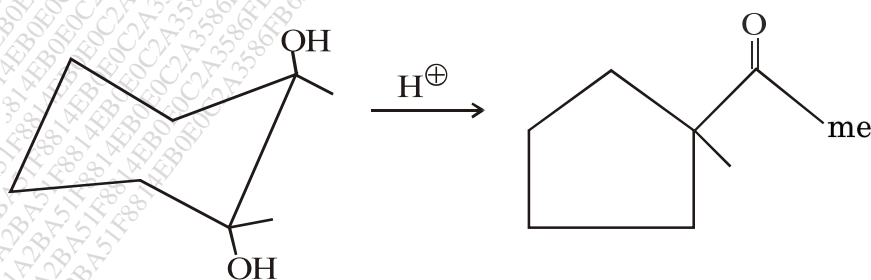


(b) How will you prepare the following using : 7



Explain :

(i) Pinacol-pinacolone rearrangement on the basis of the following reaction :



- (ii) Oxidation of allylic position using the following transformation :



4. Solve the following :

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

- (i) Hoffmann rearrangement
(ii) Oxidative cleavage of 1, 2-diol using periodic acid.

Or

- (i) Fries rearrangement is intramolecular reaction.
(ii) LiAlH_4 is non selective reducing agents.

- (b) Explain : 7

- (i) Wolf rearrangement is chain increasing process.
(ii) Birch reduction is example of dissolving metals reduction.

Or

- Explain :
(i) Diels-Alder reaction is regioselective.
(ii) OsO_4 gives Cis Hydroxylating agent.

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

- (i) Reduction of alkynes with Na/Liq NH_3 gives :
(a) Z-olefins (b) E-olefins
(c) Both (a) and (b) (d) None of these
- (ii) Isocyanate intermediate is not involved in.....rearrangement.
(a) Hofmann (b) Beckmann
(c) Curtius (d) Lossen

P.T.O.

- (iii) For trans hydroxylation.....method is use key.
- (a) Prevost (b) Woodward
- (c) KMnO_4 (d) OsO_4
- (iv) Carbonyl reduction to methylene using Zn-Hg/HCl is.....
- (a) Wolf Kishner (b) Clemmenson
- (c) M.P.V. (d) None of these
- (B) Write short notes on the following (any *two*) : 10
- (i) Catalytic hydrogenation
- (ii) Suzuki coupling
- (iii) Rupe rearrangement.