

This question paper contains 6 printed pages]

AG—152—2018

FACULTY OF SCIENCE

M.Sc. (Third Semester) EXAMINATION

NOVEMBER/DECEMBER, 2018

(CBCS Pattern)

ORGANIC CHEMISTRY

Paper CH-533/2

(Organic Synthesis—I)

(Friday, 30-11-2018)

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

Time—3 Hours

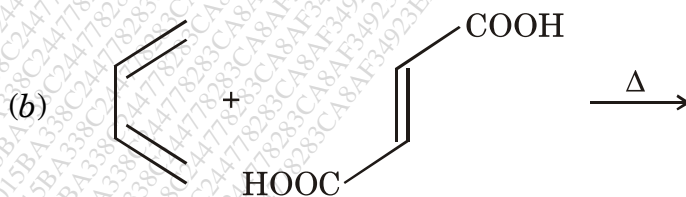
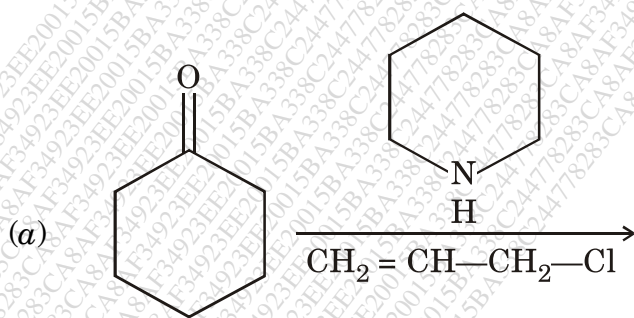
Maximum Marks—75

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

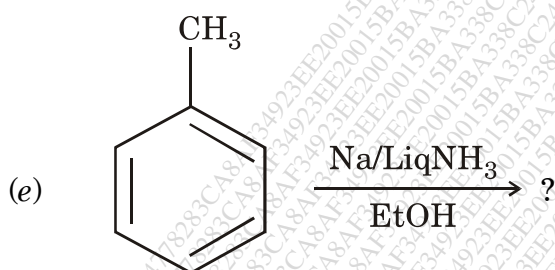
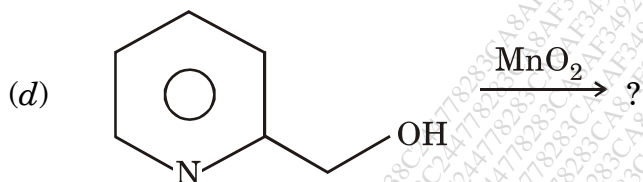
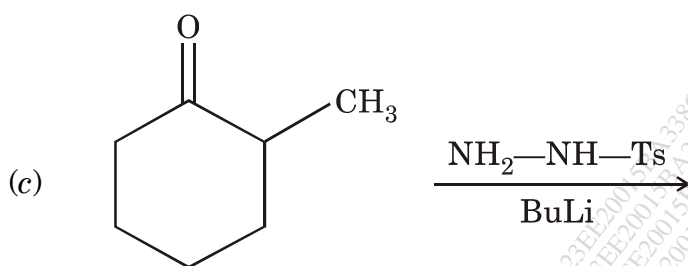
(ii) Figures to the right indicate full marks.

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

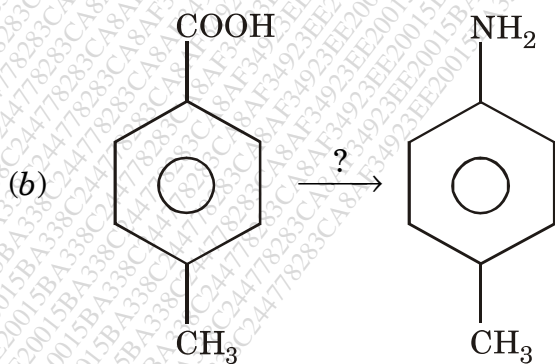
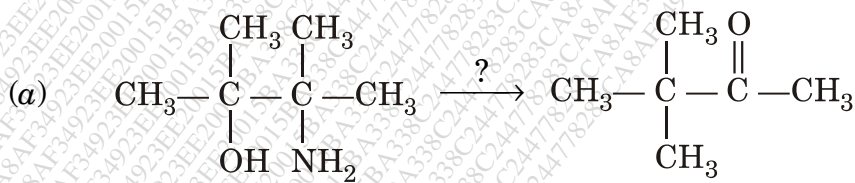
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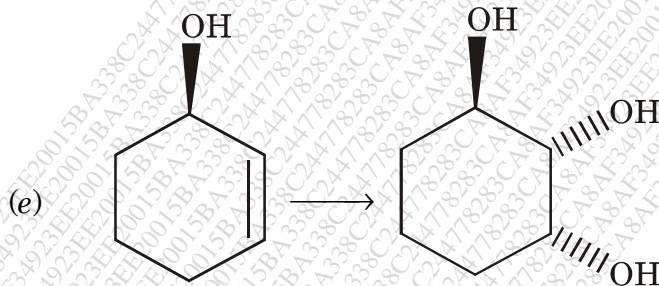
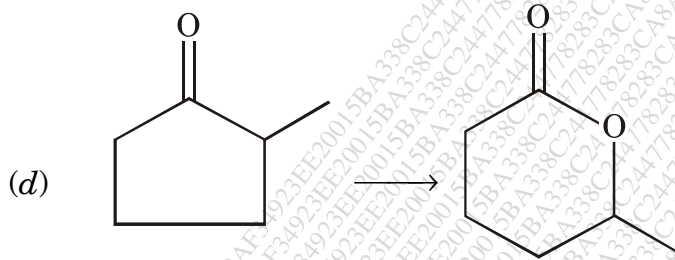
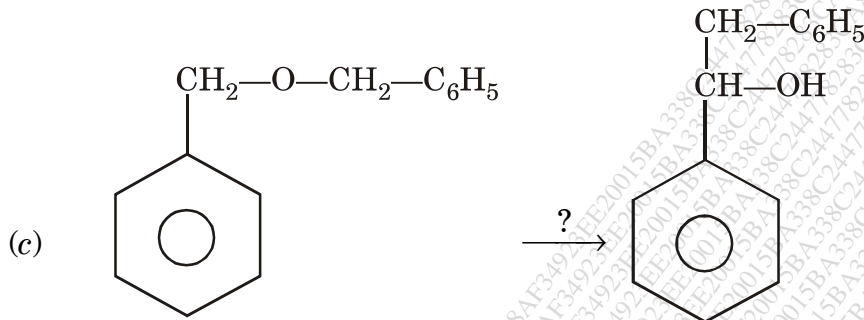


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2. Select suitable reagents for the following conversions and give appropriate mechanism : 15





3. Solve the following :

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

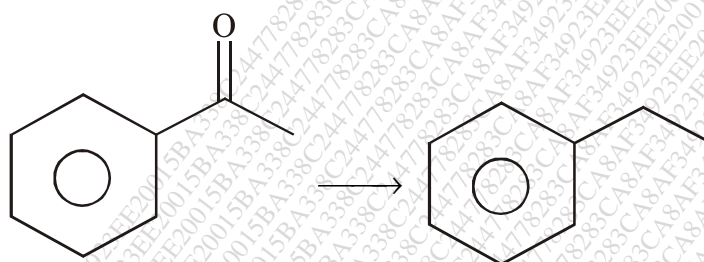
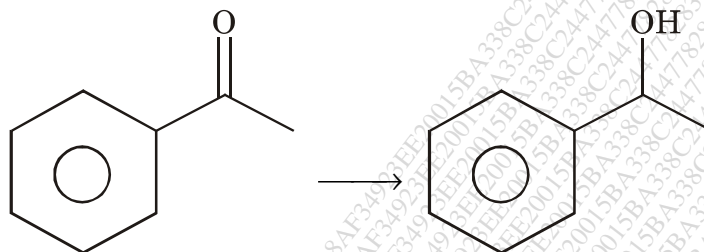
(i) Benzidine rearrangement

(ii) Barton reaction.

P.T.O.

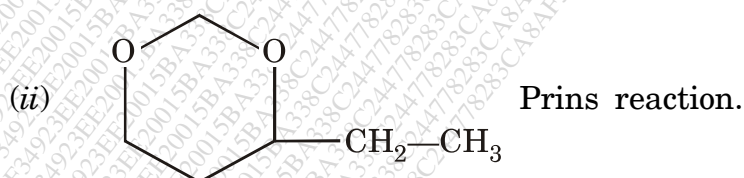
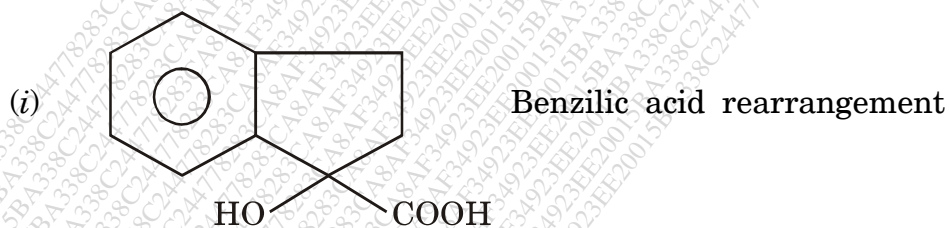
Or

Use suitable reagents for the following conversions with mechanism :



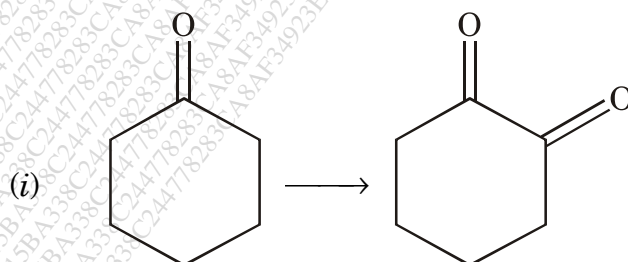
(b) How will you prepare the following using :

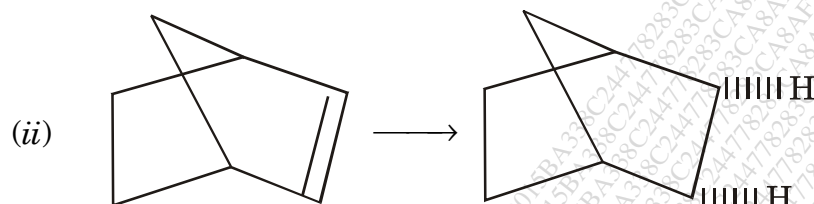
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Or

Explain :





4. Solve the following :

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

(i) Wolf rearrangement

(ii) Swern oxidation.

Or

(i) Ullmann reaction

(ii) LiAlH_4 is a non-selective reducing agent.

(b) Explain the following :

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(i) Wolf rearrangement is chain increasing process

(ii) Prevost hydxylation gives anti-diols.

Or

Explain the following :

(i) Stereoselectivity of Diels Alder reaction

(ii) BH_3 is an electrophilic reducing 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 the above

P.T.O.

- (ii) Isocyanide intermediate is not involved in rearrangement.
- (a) Hofmann
 - (b) Beckmann
 - (c) Curtius
 - (d) Lossen
- (iii) For transhydroxylation method is used.
- (a) Prevost
 - (b) KMnO_4
 - (c) Woodward
 - (d) OsO_4
- (iv) Chichibabin is an example of reaction.
- (a) Aromatic Nucleophilic
 - (b) Aromatic Electrophilic
 - (c) Free Radical
 - (d) All of the above
- (v) The best method for reduction of alkene to alkane is :
- (a) LiAlH_4
 - (b) NaBH_4
 - (c) $\text{NH} = \text{NH}$
 - (d) BH_3

(B) Write short notes on the following (any two) :

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- (i) Homogeneous hydrogenation
- (ii) Rupe rearrangement
- (iii) Bucherer reaction.