



PG-244

IV Semester M.Sc. (CBCS) Examination, July - 2019

CHEMISTRY

C 403 : OC : Organic Synthesis

Time : 3 Hours

Max. Marks : 70

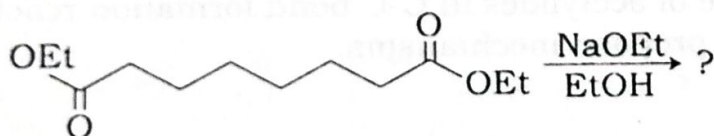
Instruction : Answer question No. 1 and **any five** of the remaining.

1. Answer **any ten** of the following :

10x2=20

(a) What is Fischer-Hepp reaction ? Explain with an example.

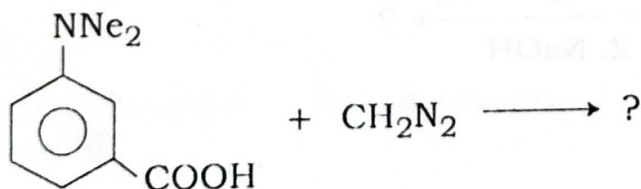
(b) Predict the product and propose a mechanism.



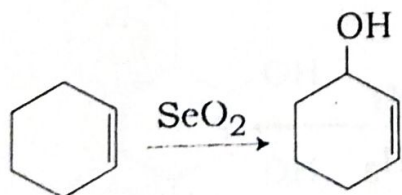
(c) With a suitable example give the mechanism of Mitsunobu reaction.

(d) Give the applications of 1,3-dithione in organic synthesis.

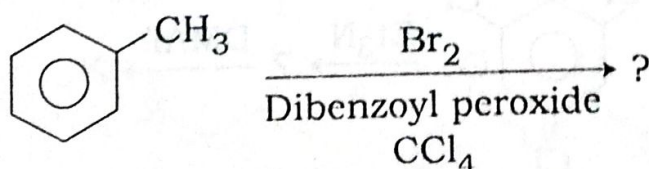
(e) Predict the product and propose a mechanism.



(f) Suggest a suitable mechanism for the following :

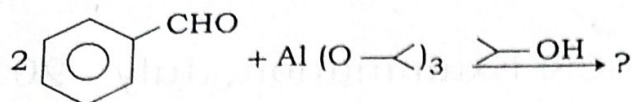


(g) Give the product and mechanism for the following reaction :

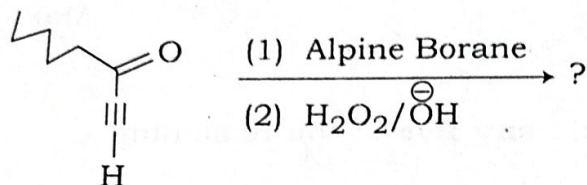




- (h) - What is the product of the following reaction? Propose a mechanism for its formation.



- (i) With a suitable example, give the mechanism of Willgerdot reaction.
 (j) What is asymmetric induction? Explain with examples.
 (k) Predict the major product and propose a mechanism.

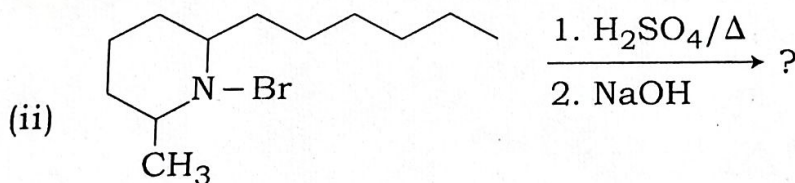
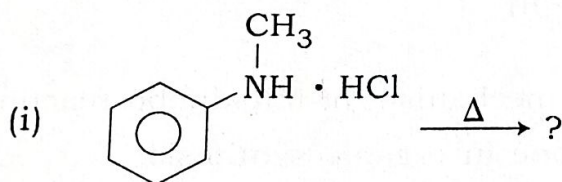


- (l) Draw the structure of (S) - PBMgCl and give its application in asymmetric synthesis.

2. (a) Give a brief account on use of acetylides in C-C bond formation reactions.

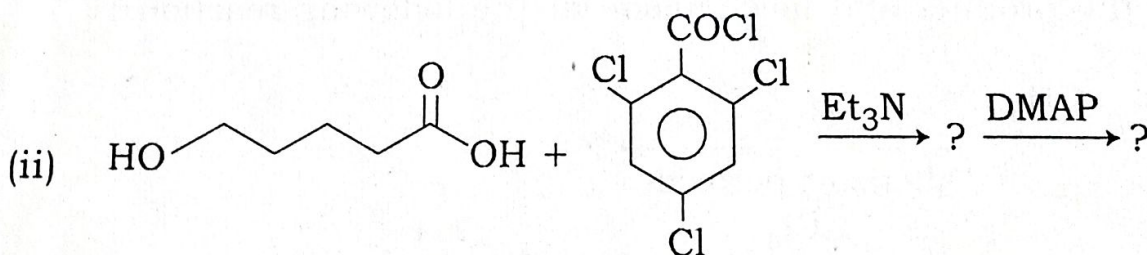
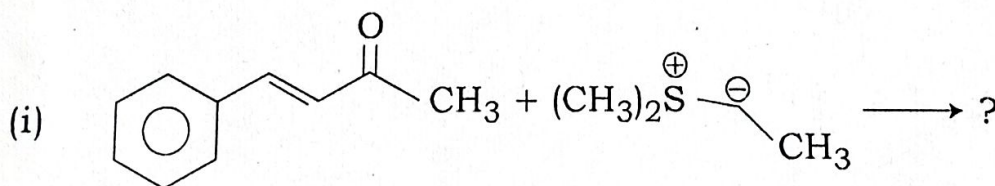
- (b) Predict the products and propose mechanisms.

4+6=10



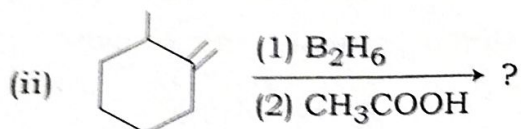
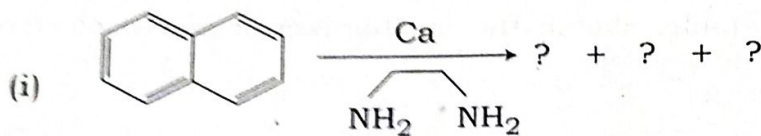
3. (a) Sketch the mechanism of formation of a peptide bond by DCC.
 (b) Predict the products and propose mechanisms.

4+6=10

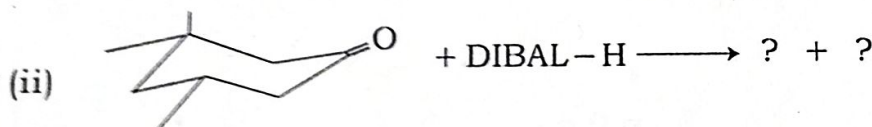
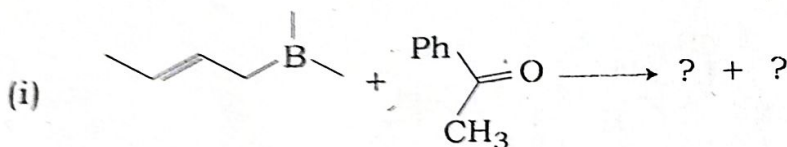




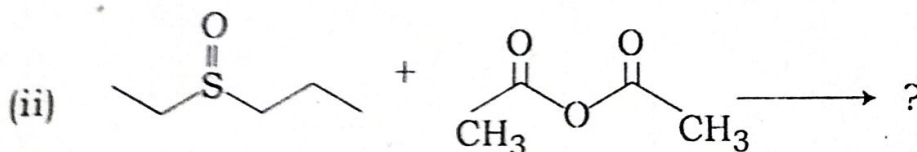
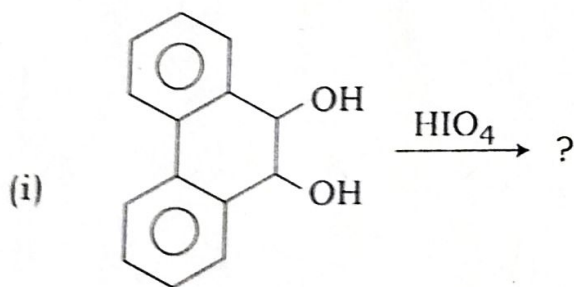
4. (a) Write briefly on the preparation, properties and applications of CF_3COOOH . 4+6=10
(b) Predict the products and propose mechanisms.



5. (a) What is 'ee'? Give any one physical method of determination of 'ee'. 4+6=10
(b) Predict the products and propose mechanisms.



6. (a) What is Houben - Hoesch reaction? Sketch the mechanism with an example. 4+6=10
(b) Predict the products and propose mechanisms.





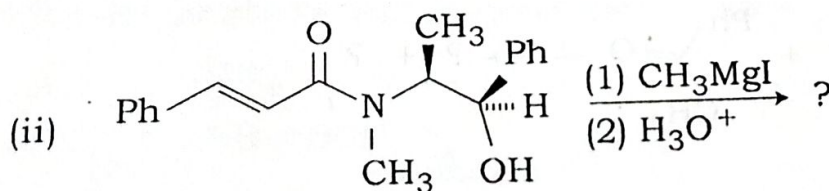
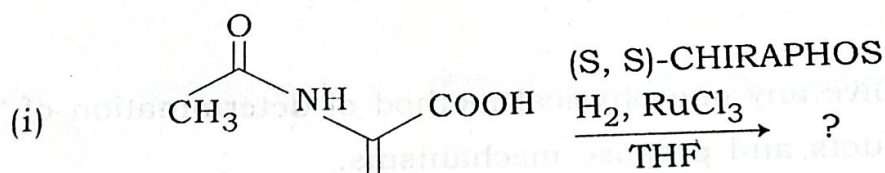
7. (a) Give an account of the following in organic synthesis : 6+4=10

- (i) Robinson annulation
 (ii) PPA

(b) With a suitable example, sketch the mechanism of stereoselective cyclization of Polyenes.

8. (a) What is Dess-Martin oxidation ? Give the mechanism and applications. 4+6=10

(b) Predict the products with correct stereochemistry and propose mechanisms for their formation.



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