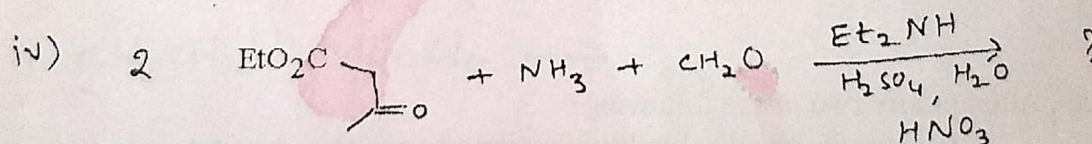
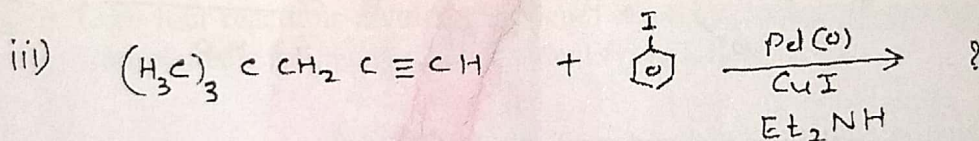
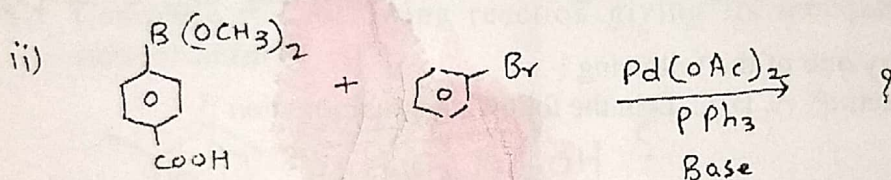
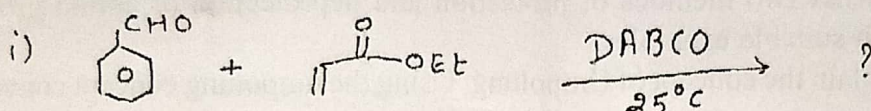


- N.B : 1. All questions are compulsory.
 2. Figures to the right indicate full marks.

1. (a) Give the product, name and mechanism of the following reactions. 8
 (Attempt any two) :

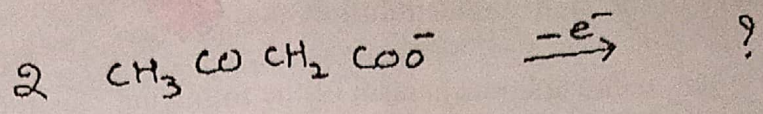


- (b) Attempt any one of the following : 4
 (i) What are Domino reactions ? Explain with a suitable example.
 (ii) Give an example of the following reactions.
 Wacker oxidation,
 Mitsunobu reaction,
 Heck reaction &
 Ugi-4-component synthesis

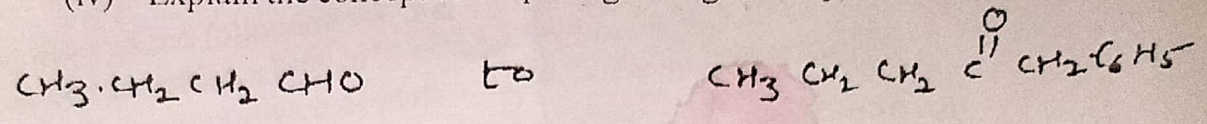
[TURN OVER

2. (a) Attempt **any two** of the following :

- (i) Discuss the use of nitro compounds as acyl anion equivalent with suitable examples.
- (ii) Give the product, name and mechanism of the following reaction :

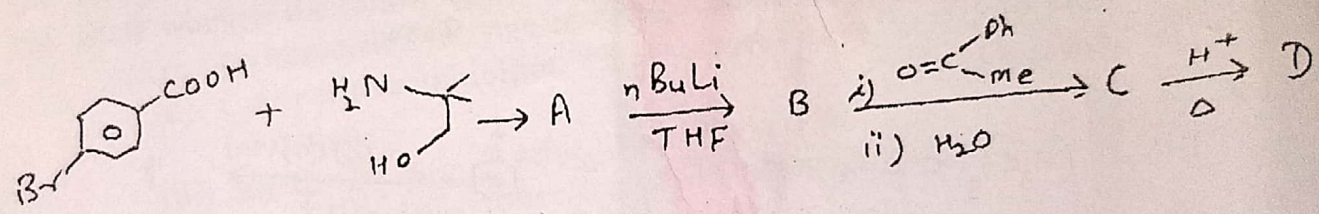


- (iii) Discuss two methods of protection and deprotection of amino group with suitable examples.
- (iv) Explain the concept of Umpolung. Using the umpolung concept convert

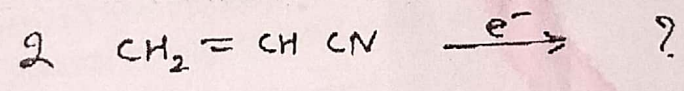


(b) Attempt **any one** of the following :

- (i) Identify A, B, C, D in the following transformation :

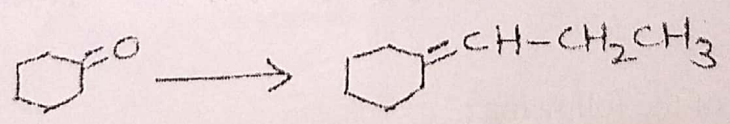


- (ii) Give the product and mechanism of the following reaction :

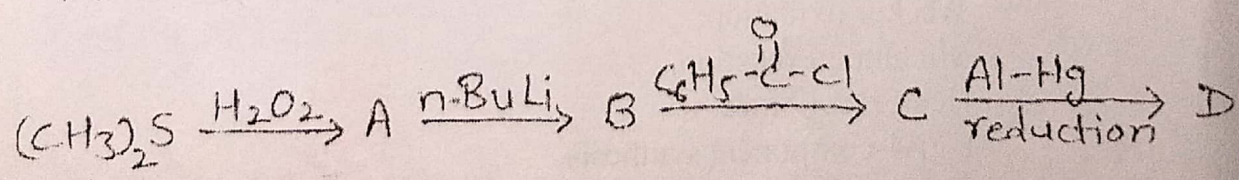


3. (a) Attempt **any two** of the following :

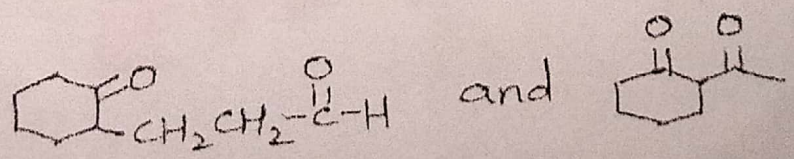
- (i) Give the reaction for the following conversion and explain the mechanism involved -



- (ii) Discuss briefly 'Bestmann-Ohira reagent'.
- (iii) Identify A, B, C and D in the following reaction sequence :



- (iv) Explain preparation of the following compounds via enamines.

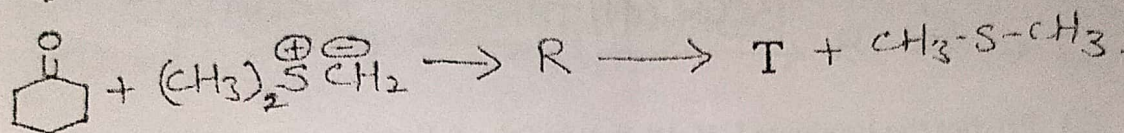
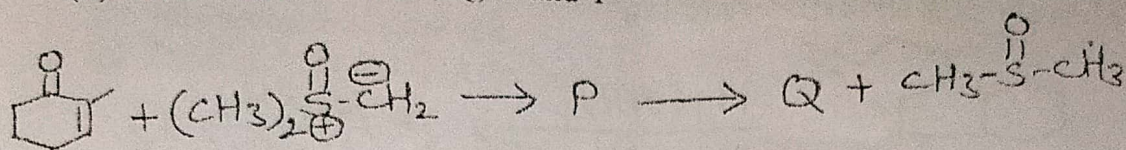


[TURN OVER

(b) Attempt **any one** of the following :

4

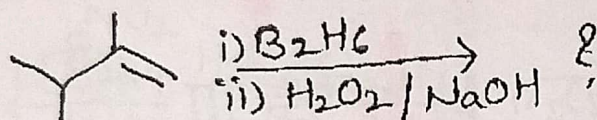
- (i) Write a note on Julia olefination.
 (ii) Give structures for P, Q, R and T -



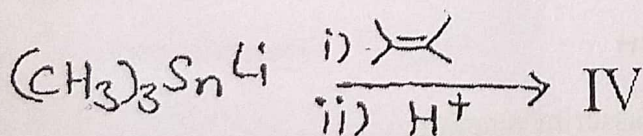
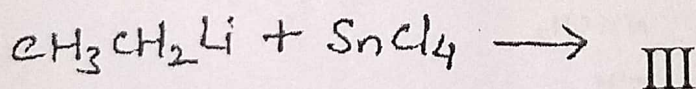
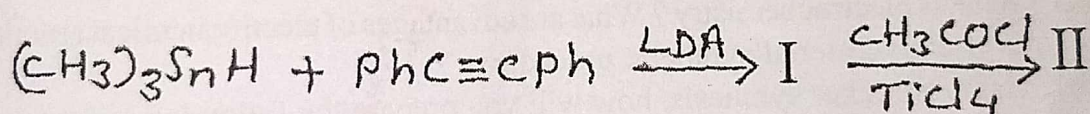
4. (a) Attempt **any two** of the following :

8

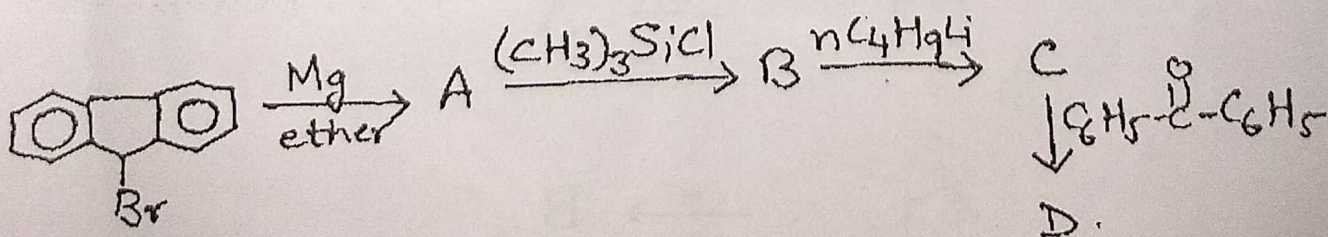
- (i) Complete the following reaction giving its mechanism and stereochemistry:



- (ii) Give four reactions involving silylenol ethers as enolate precursors.
 (iii) Complete the following reactions identifying I, II, III & IV



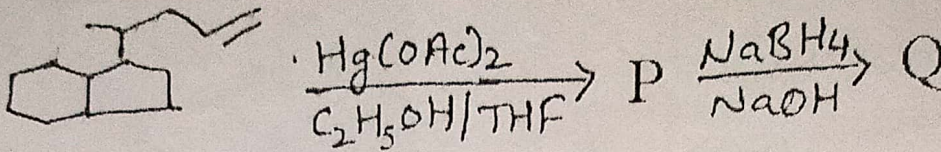
(iv) Identify A, B, C and D in the following :-



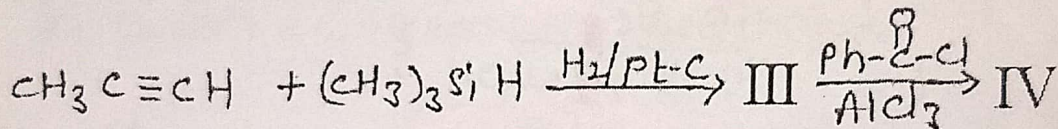
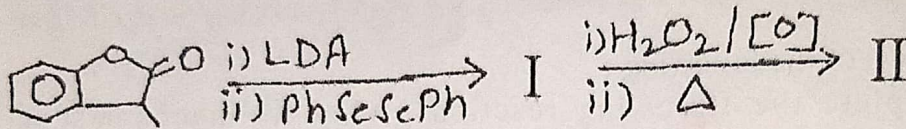
[TURN OVER

(b) Attempt **any one** of the following :

- (i) Identify the products P & Q give the mechanism and stereochemistry of the following reaction :



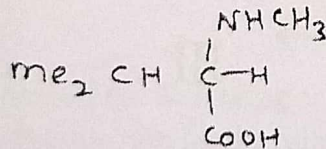
- (ii) Predict the products I, II, III & IV of the following reactions -



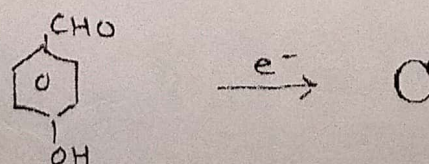
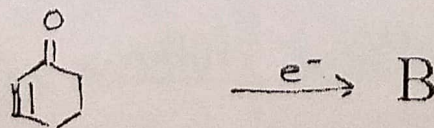
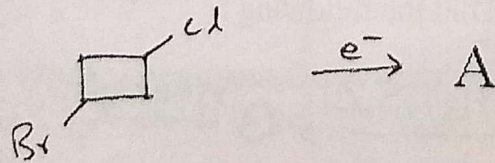
5. Attempt **any four** of the following :

12

- (a) What is electrochemistry? What are advantages of electrochemical reactions over conventional synthetic procedures?
- (b) Using Strecker synthesis, how will you prepare the following compound :

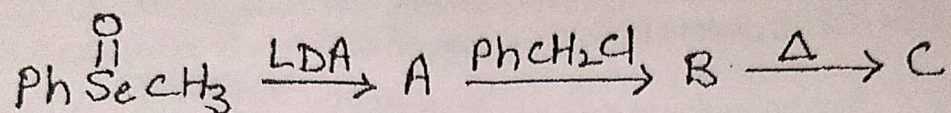


- (c) Discuss the mechanism of Passerini reaction.
- (d) Write the main products A, B & C for the following :-



[TURN OVER

- (e) Give relative structures and relative stabilities of sulfonium and sulfoxonium ylides.
(f) How are enamines prepared using alkynes ? Give one example and explain the mechanism involved.
(g) Identify A, B and C in the following :



- (h) Predict the products P, Q & R :

