

Organic Concepts Homework

Solutions to HWS-6-Organic Concepts

1.

Consider following two reactions : (I) and (II)



(i) The rate of reaction – I _____ by factor _____.

(ii) The rate of reaction – II _____ by factor _____.

When (a) $[\text{OH}^-]$ is doubled and (b) Both $[\text{OH}^-]$ and $[\text{RCl}]$ are doubled.

(a) R_{I} doubles & R_{II} remains same

(b) R_{I} increases 4 times & R_{II} doubles

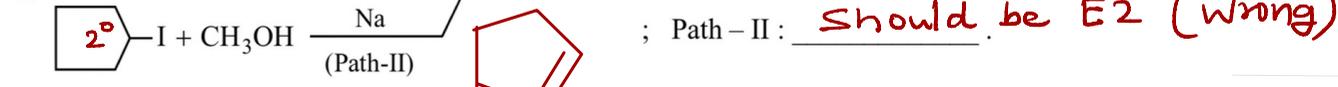
2.

Which of following path(s) is correct path for the formation of given product. If false, explain why ?

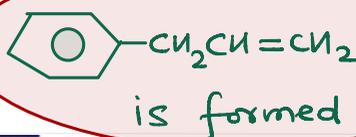
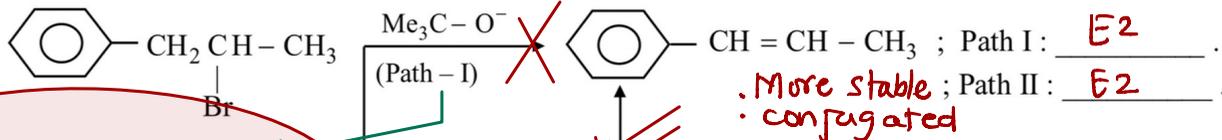
1.



Or



2.

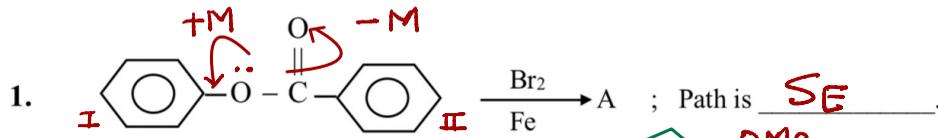


(Path-II)

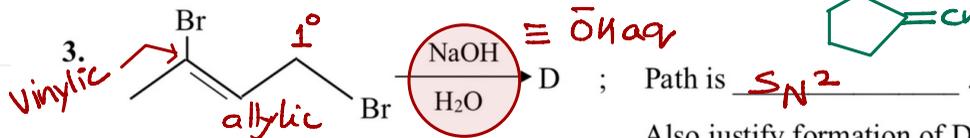
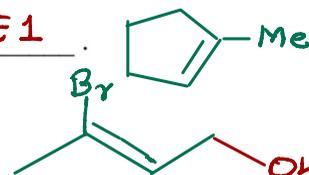
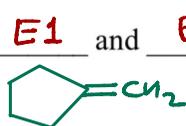
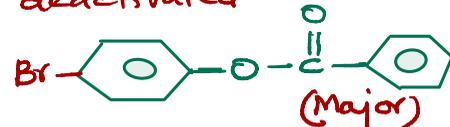
Note: Me_3CO^- : sterically hindered bulky base gives Hoffmann's product

3.

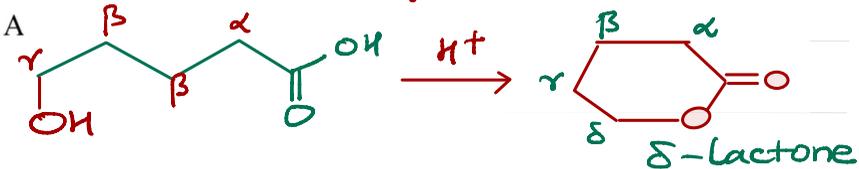
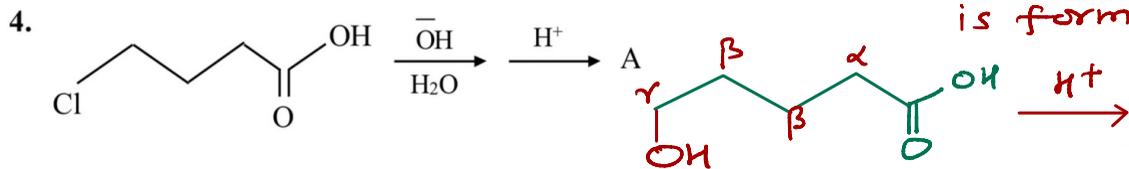
Identify the products.



Ring-I is activated ; Ring-II is deactivated

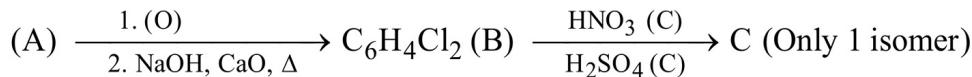
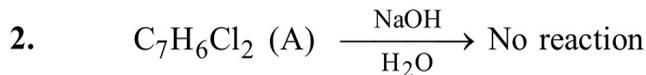
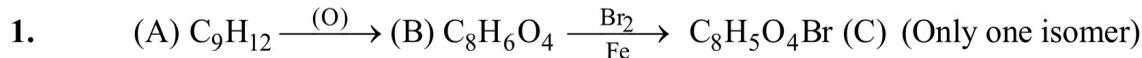


Also justify formation of D. In SN2 Rxn, only 1 product is formed.

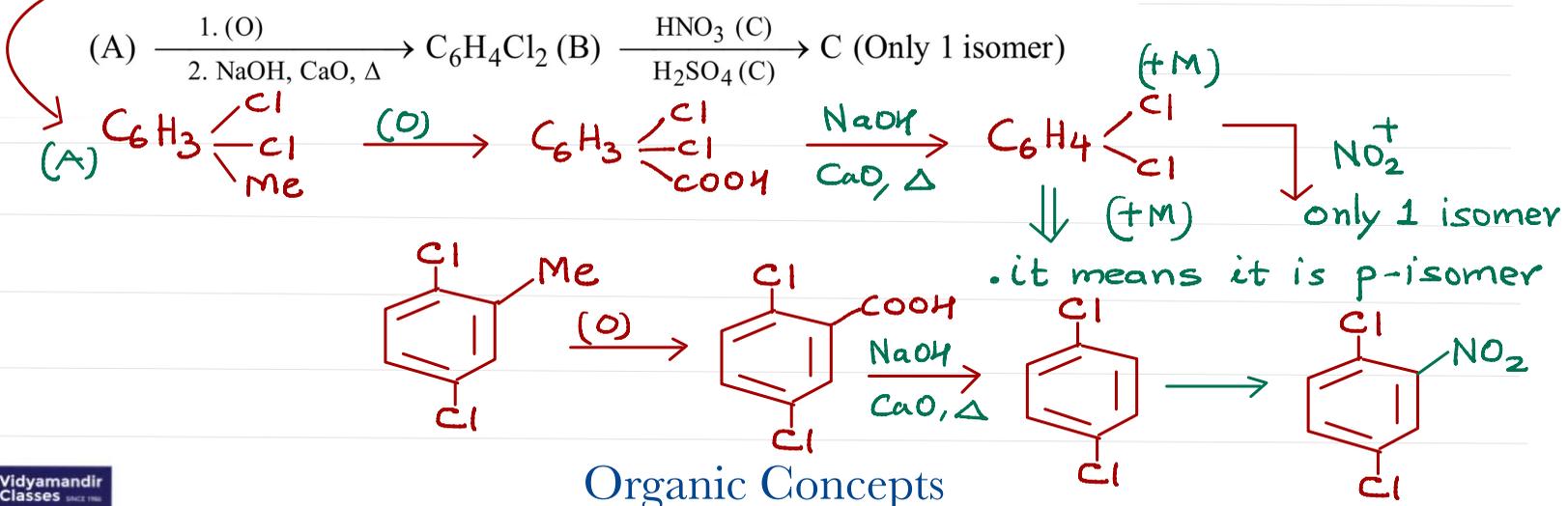
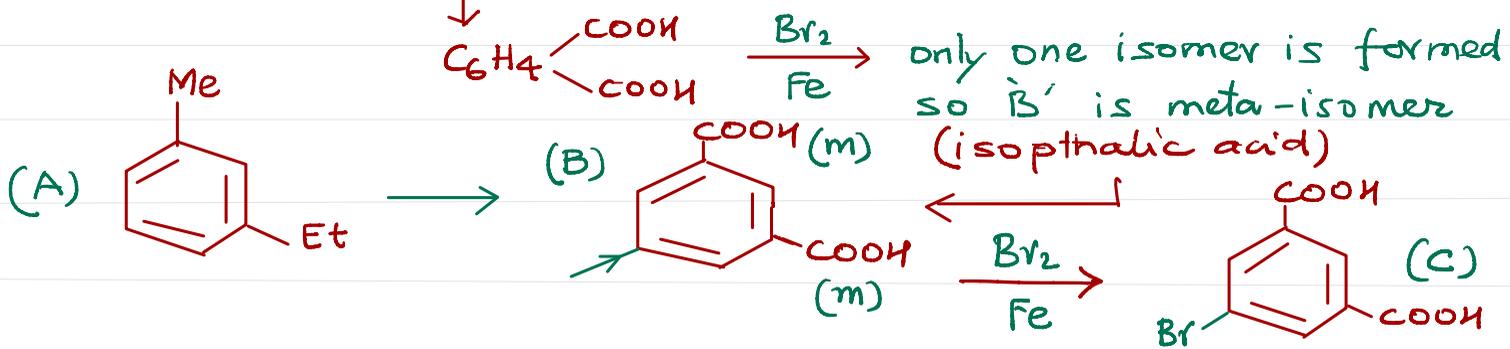
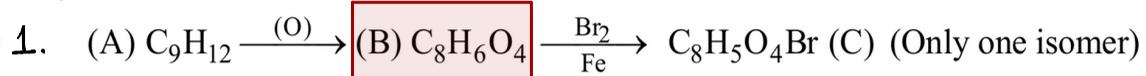


4.

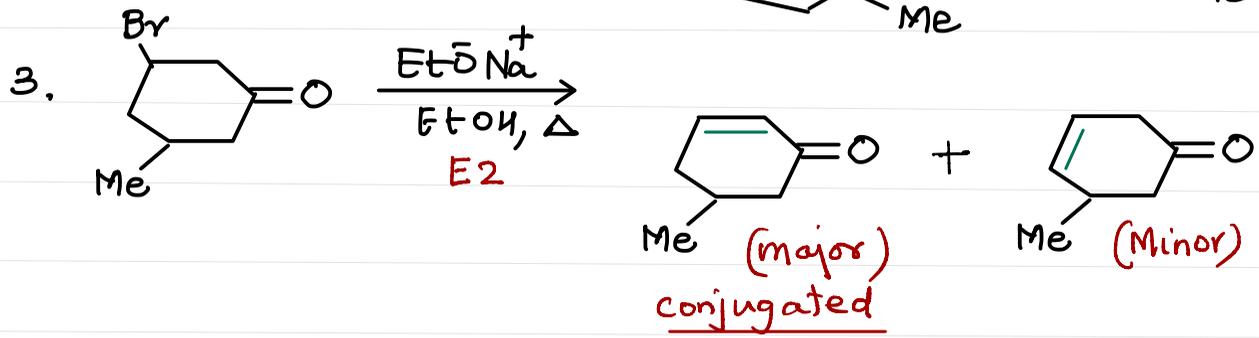
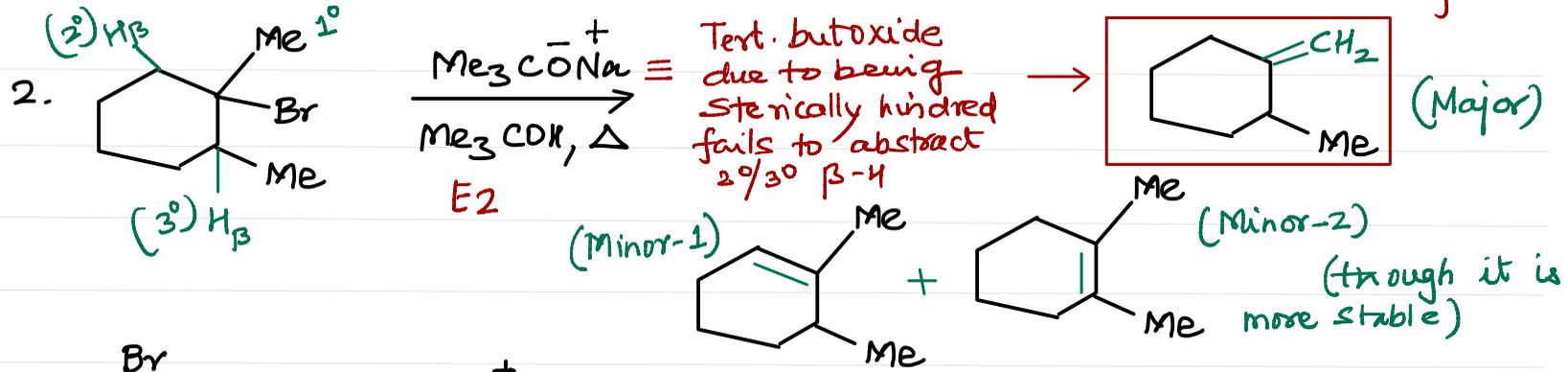
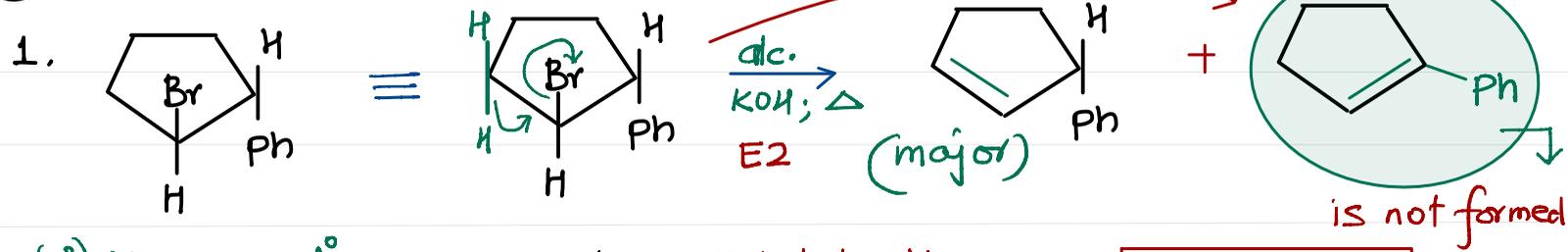
Identify A, B, C.

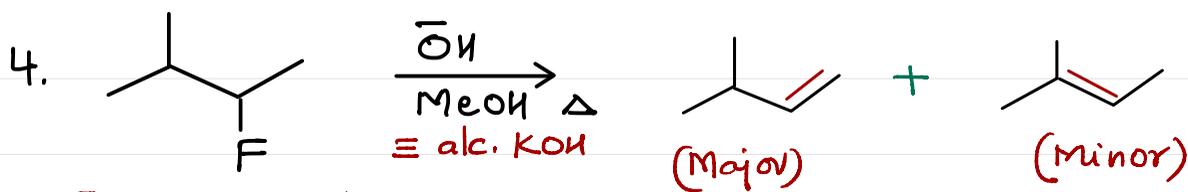


4.

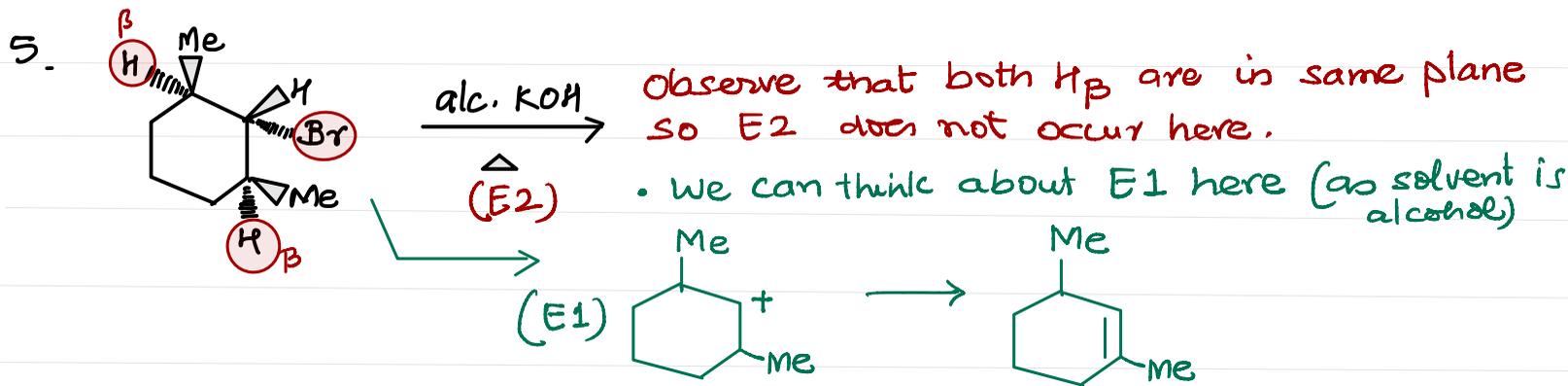


5. Identify Major & minor Products.

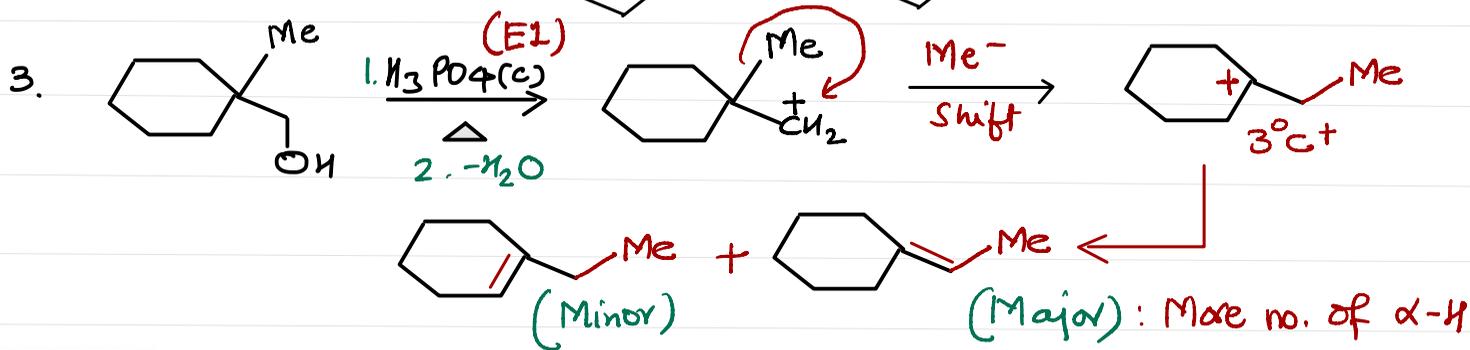
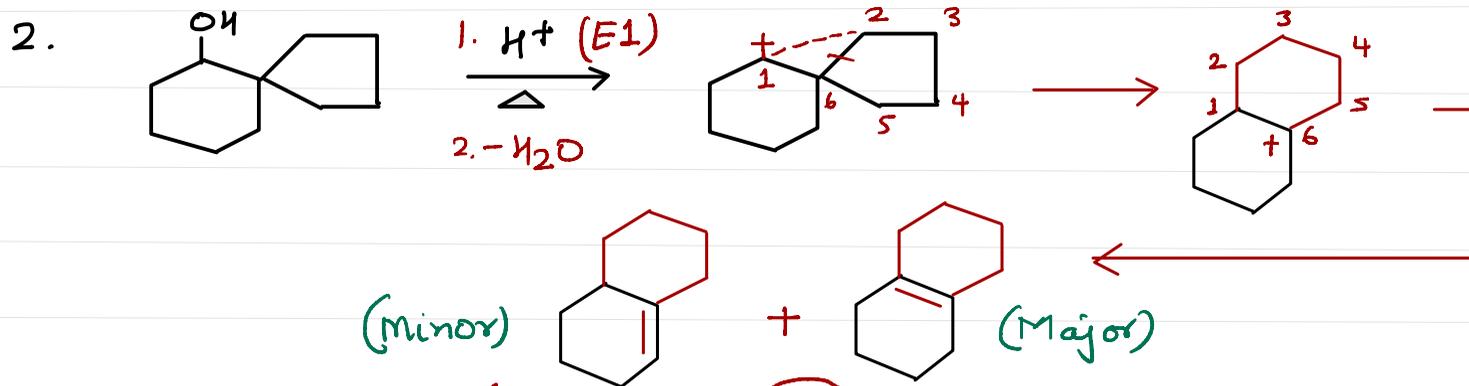
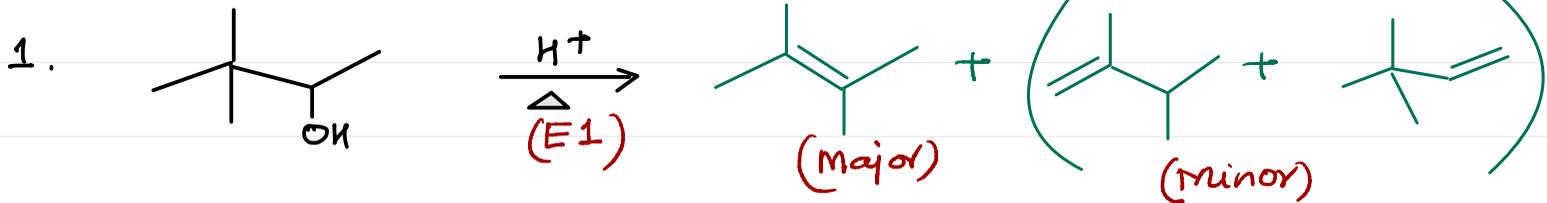


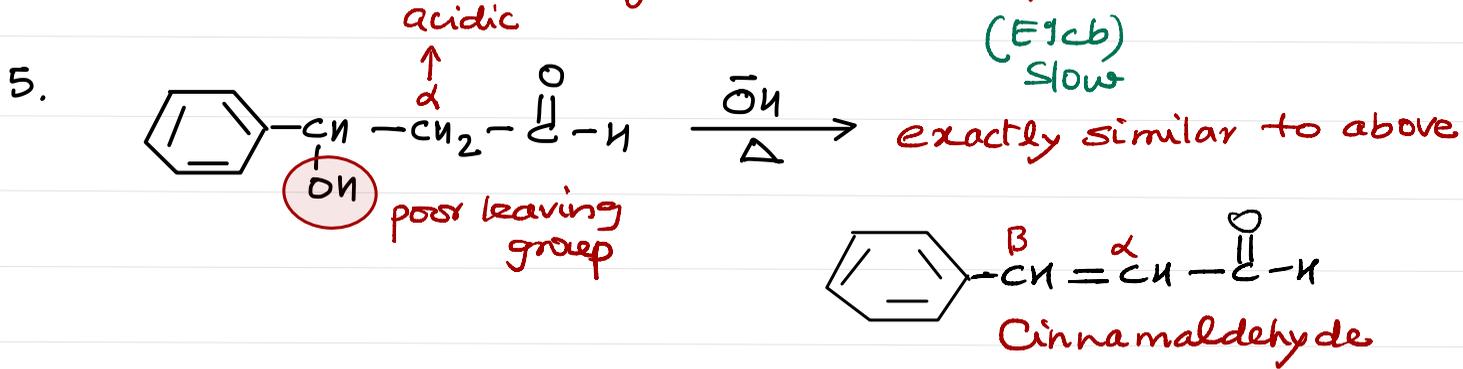
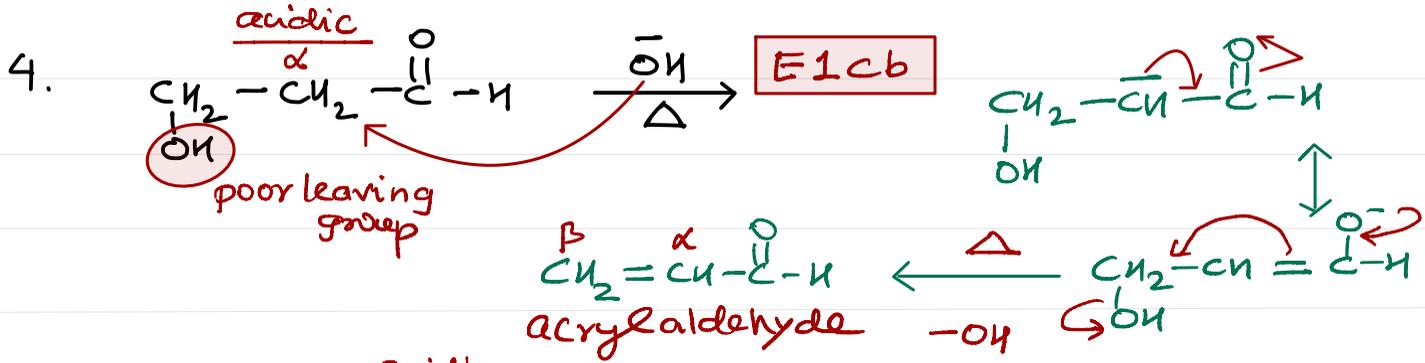


- F^- is a poor leaving group (as it is a strong base)
- as a result, double bond character is not formed in T.S and 1°C acquires δ^- (Carbanion) character & it is more stable. As a result Hoffmann's product is Major

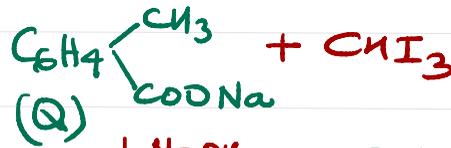
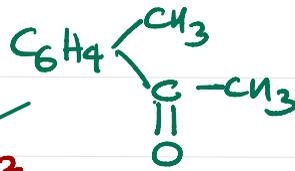
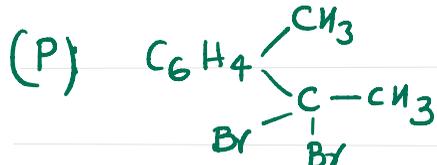
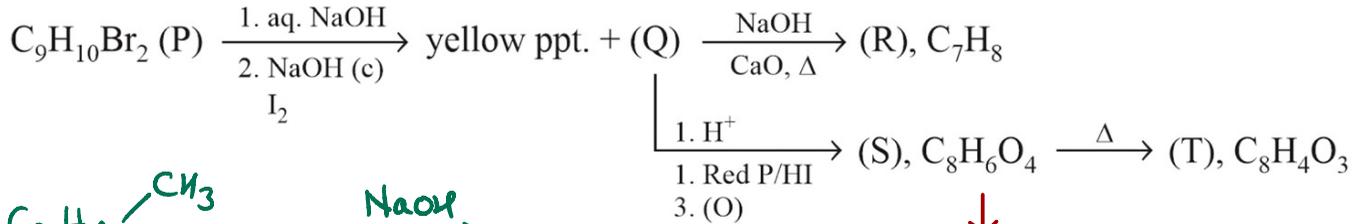


⑥ Identify Major & Minor Products.

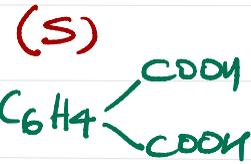
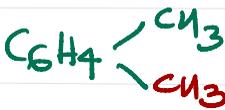
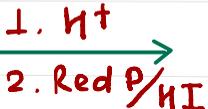
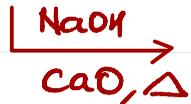




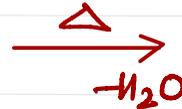
* Identify the compounds P, Q, R, S and T in the following reaction sequence.



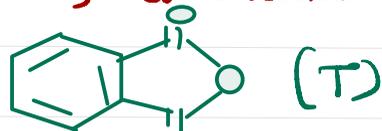
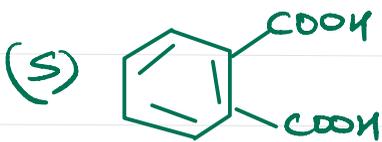
↓
 • dicarboxylic acid
 • it should be Cc1ccccc1C(=O)C(=O)O
 • it means that (P) should be a di-substituted derivative



o, p, m- phthalic acids



⇒ it should be o- (phthalic acid)



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