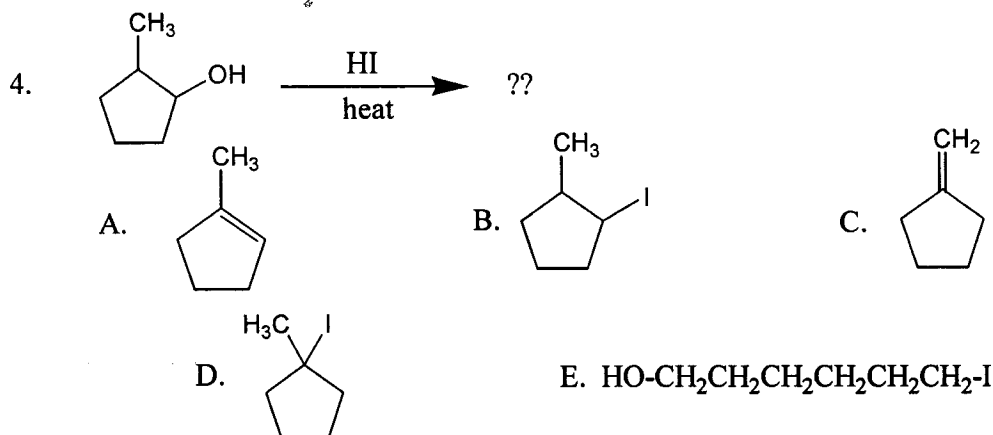
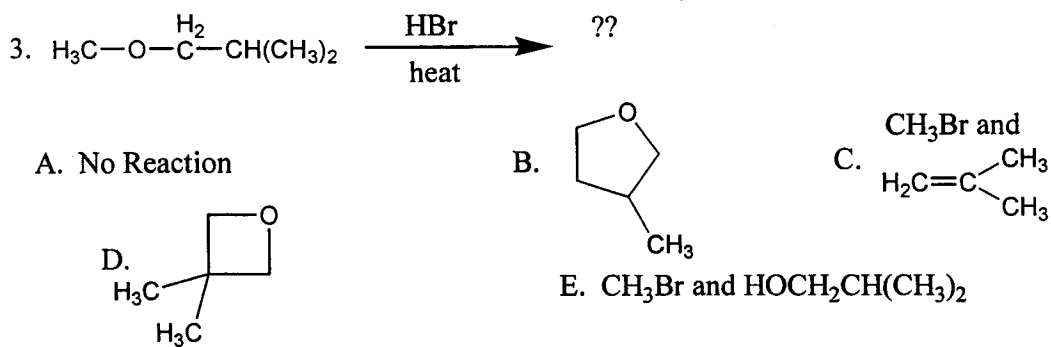
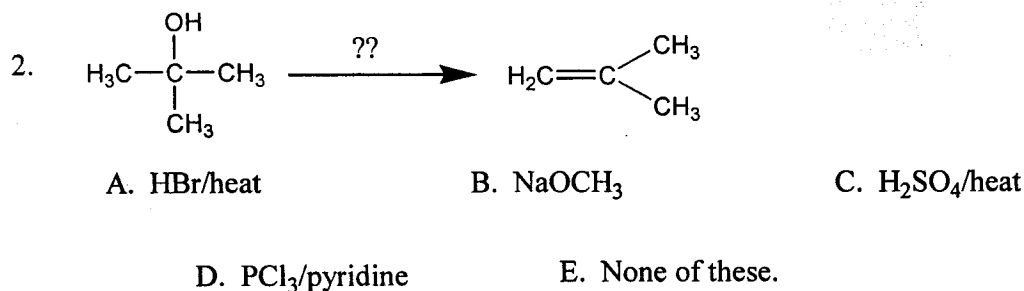
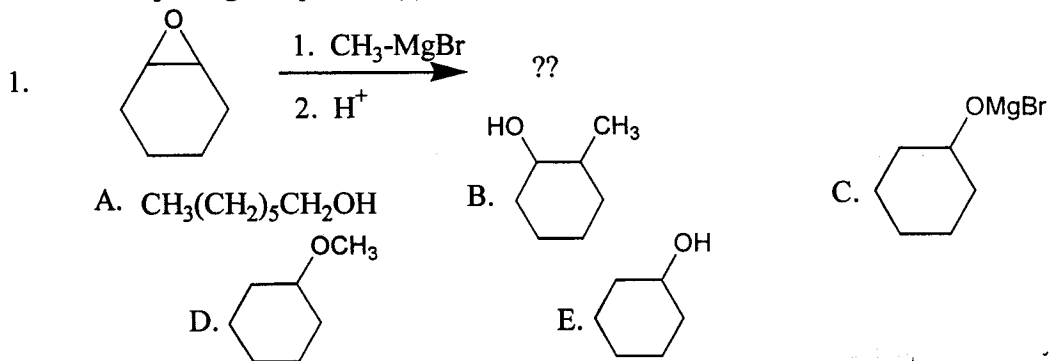
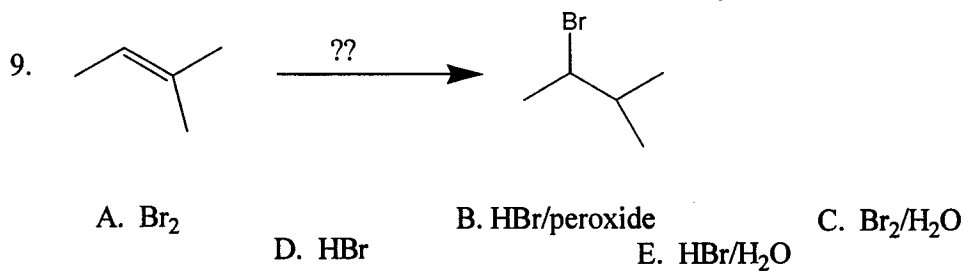
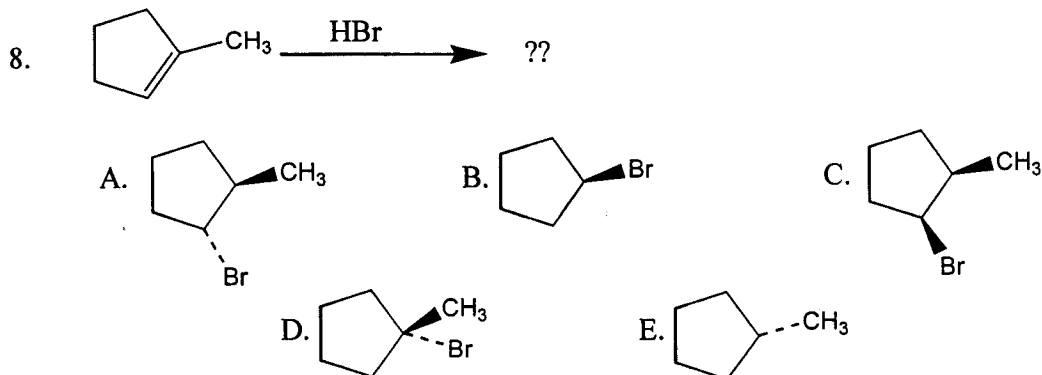
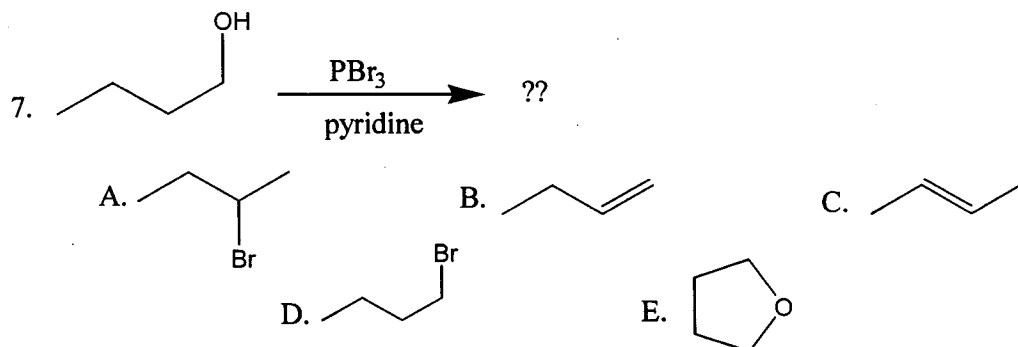
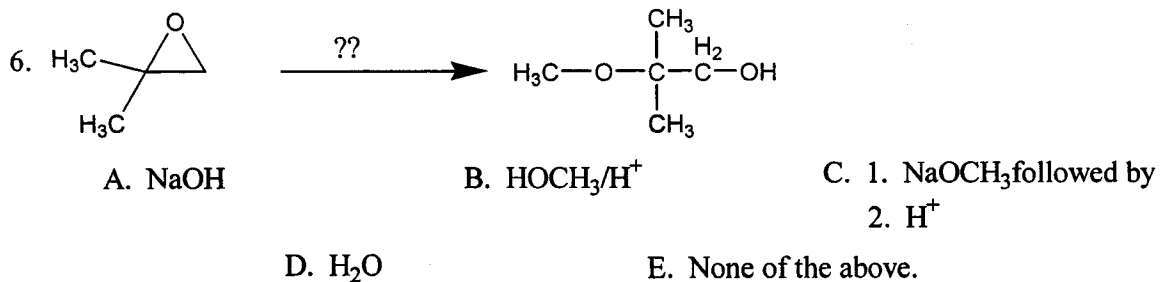
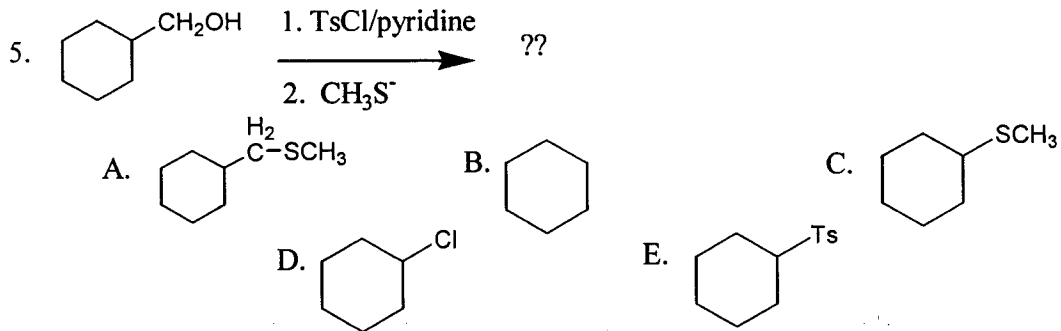
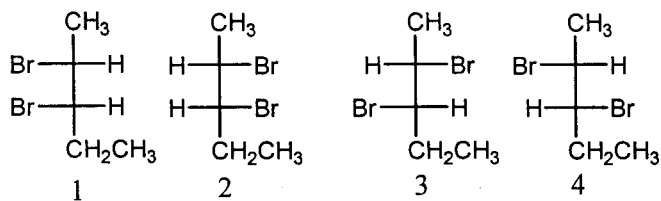
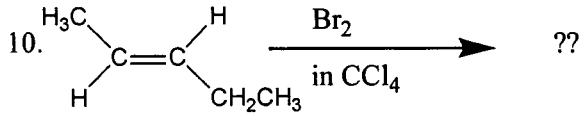


Multiple Choice (Choose the one best answer for each of the following. Record this answer on the scantron sheet provided.)

Give the major organic product(s) or necessary reagents for the following reactions.







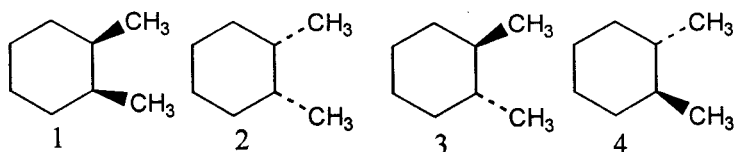
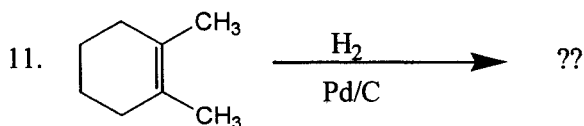
A. 1 and 2 only

B. 3 and 4 only

C. 1 and 3 only

D. 2 and 3 only

E. 1, 2, 3, and 4



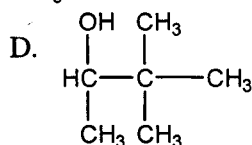
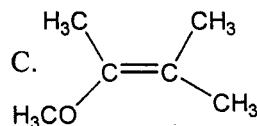
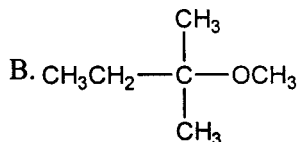
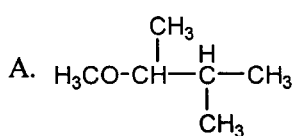
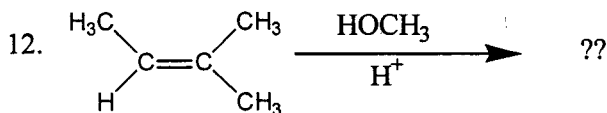
A. 1 only (2 is identical to 1)

B. 3 and 4 only

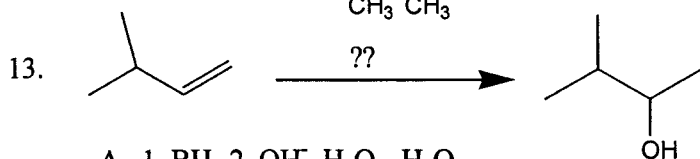
C. 1 and 3

D. 1, 3, and 4

E. 1, 2, 3, and 4



E. None of the above.



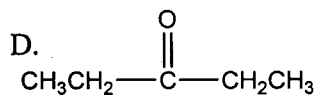
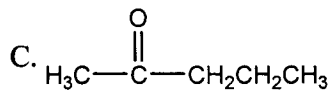
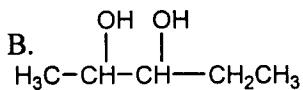
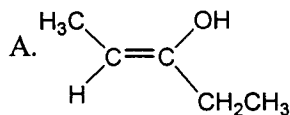
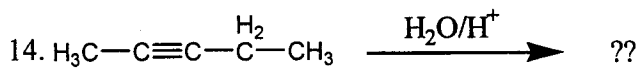
A. 1. BH_3 2. OH^- , H_2O_2 , H_2O

B. 1. $\text{Hg}(\text{OAc})_2$, H_2O , THF 2. NaBH_4 , OH^-

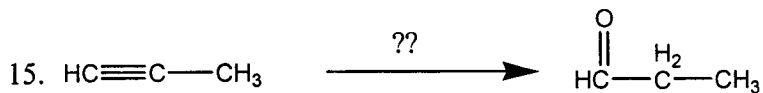
C. H_2O_2

D. $\text{H}_2\text{O}/\text{H}^+$

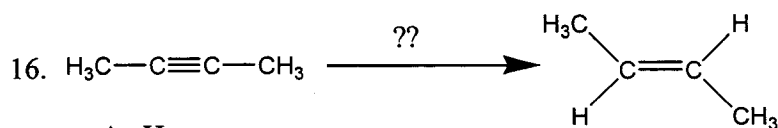
E. Any of the above will work.



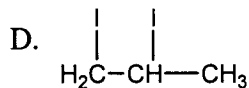
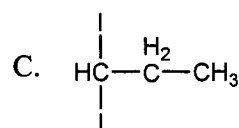
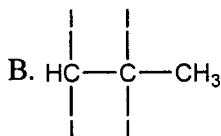
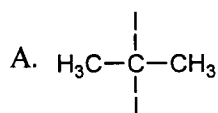
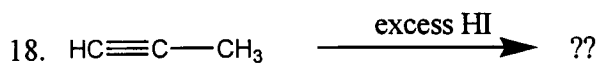
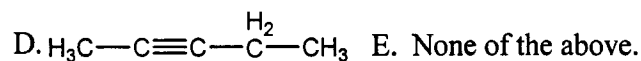
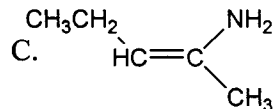
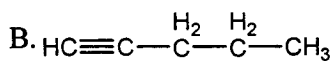
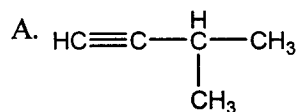
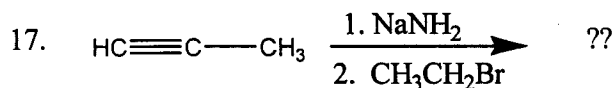
E. Both C and D.



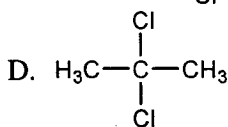
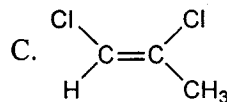
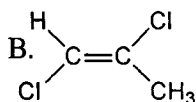
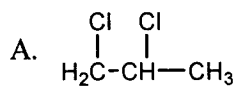
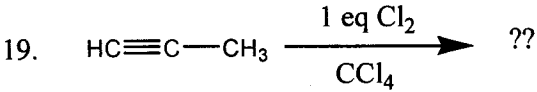
- A. $\text{H}_2\text{O}/\text{H}^+$
 B. 1. R_2BH 2. OH^- , H_2O_2 , H_2O
 C. HgSO_4 , H_2SO_4 , H_2O
 D. NaOH
 E. O_2



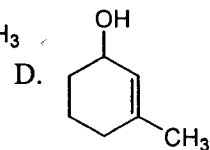
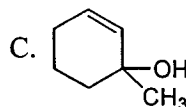
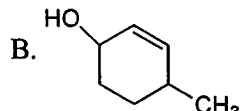
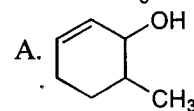
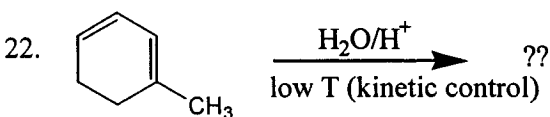
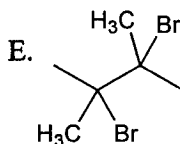
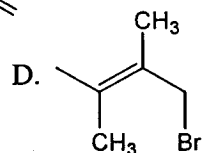
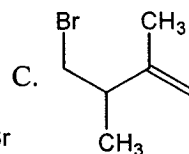
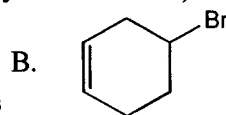
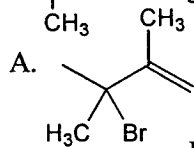
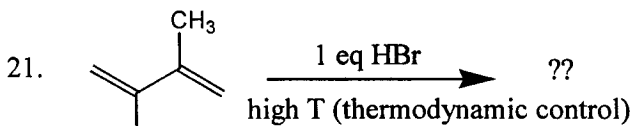
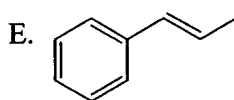
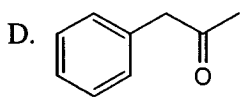
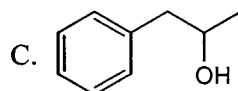
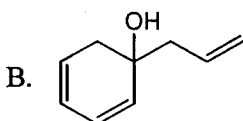
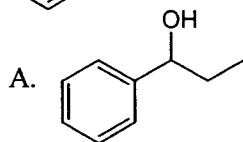
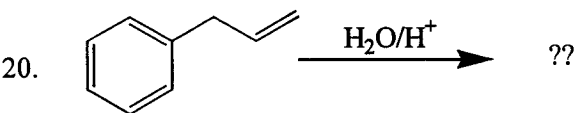
- A. H_2
 B. H_2 /Lindlar's catalyst
 C. $\text{Na}/\text{NH}_3(\text{l})$
 D. H_2 on Pd/C
 E. BH_3



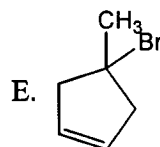
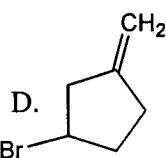
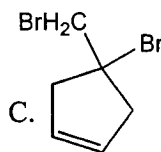
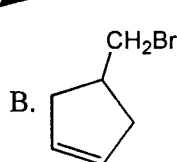
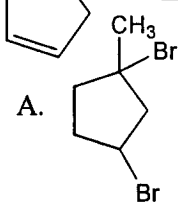
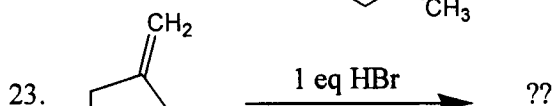
E. CH_3I

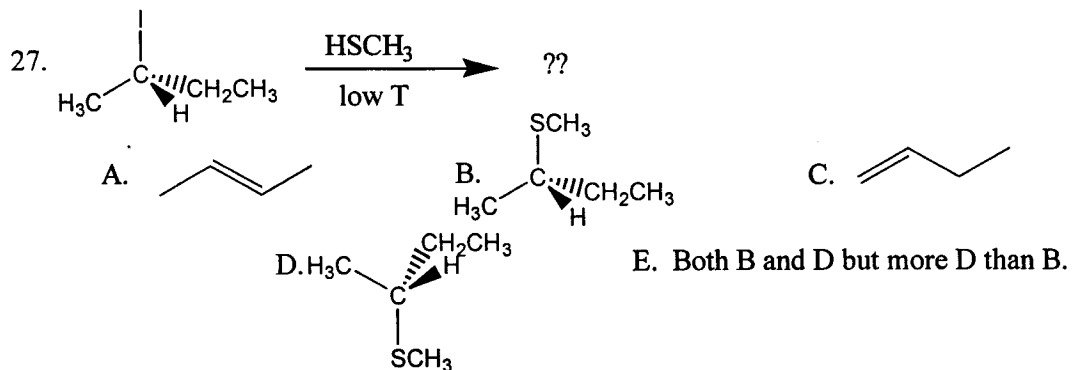
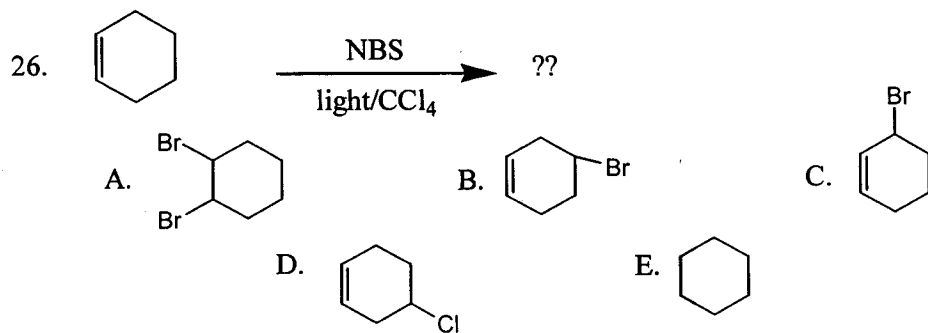
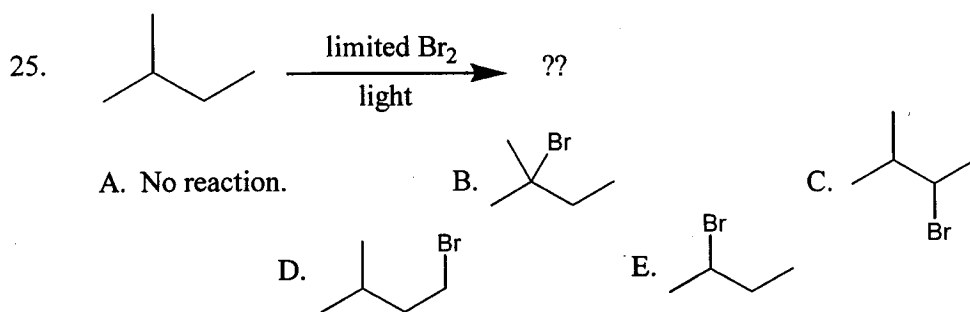
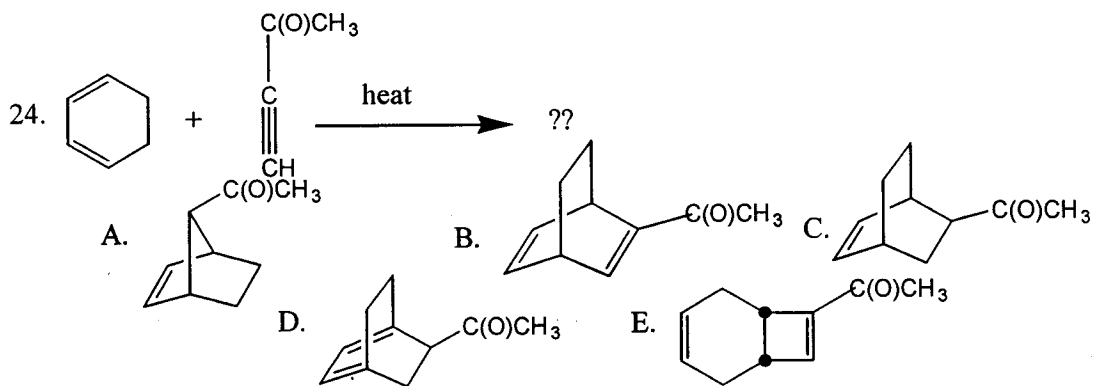


E. Both B and C in equal amounts.



E. All of the above will be produced in equal amounts.





28. If the reaction in the preceding question were carried out at high temperature with NaOCH_3 instead of HSCH_3 , the major product would be that shown in

A. A

B. B

C. C

D. D

E. Equal amounts of A and C.