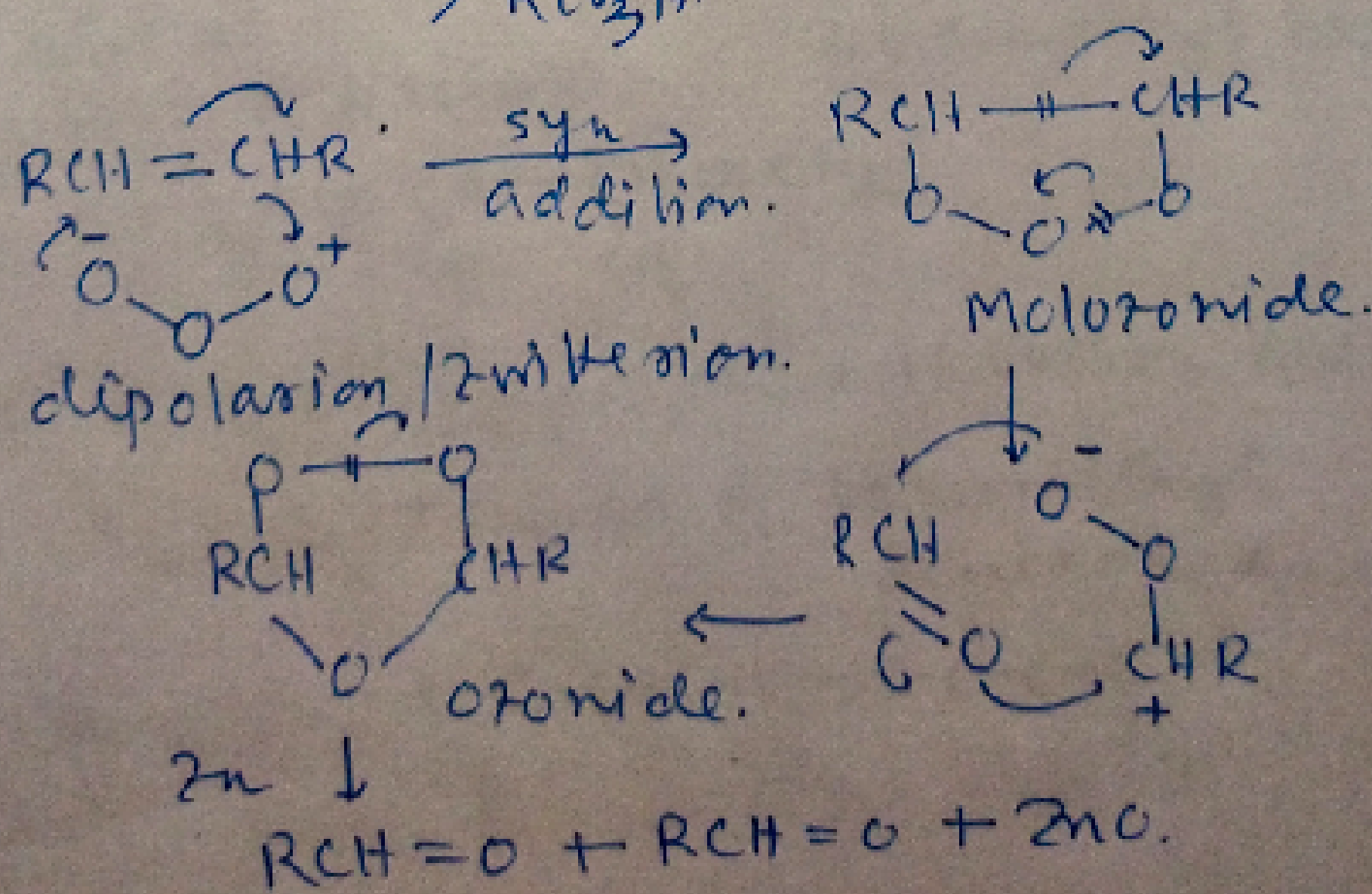
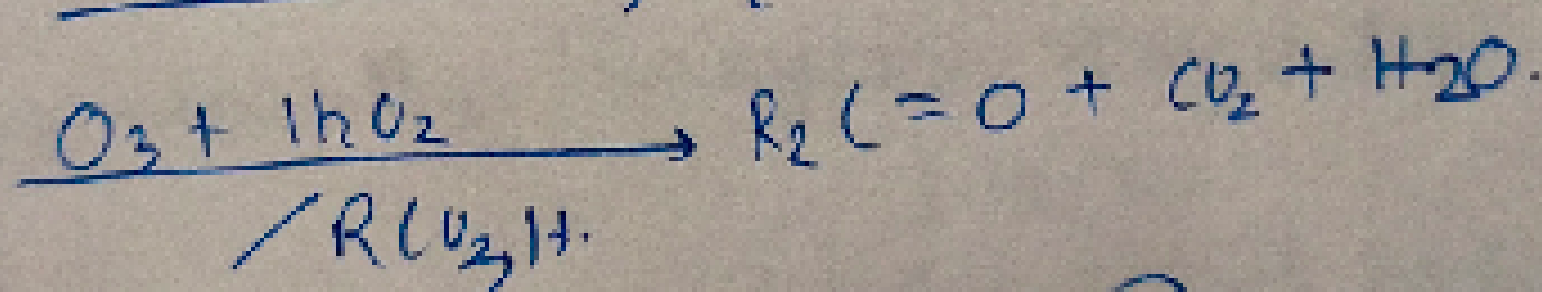
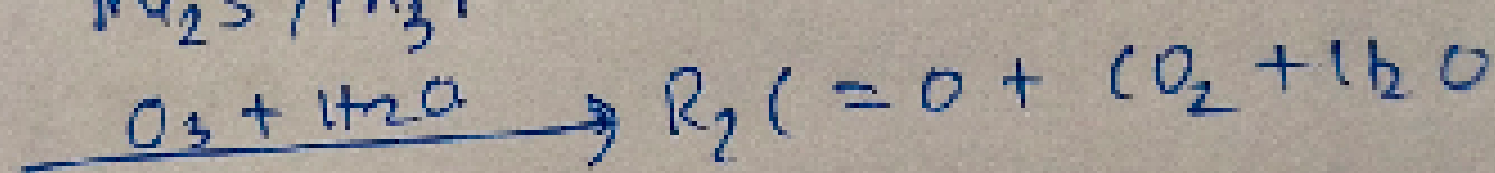
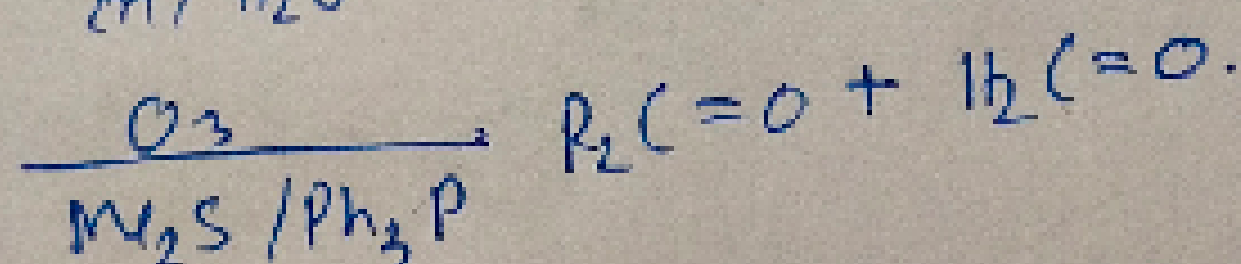
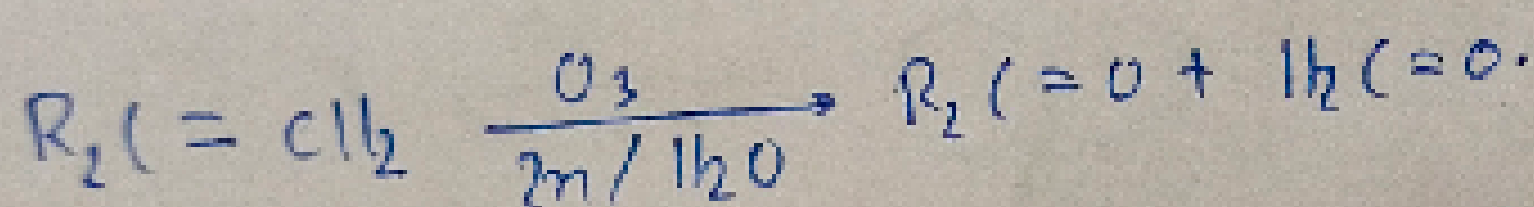
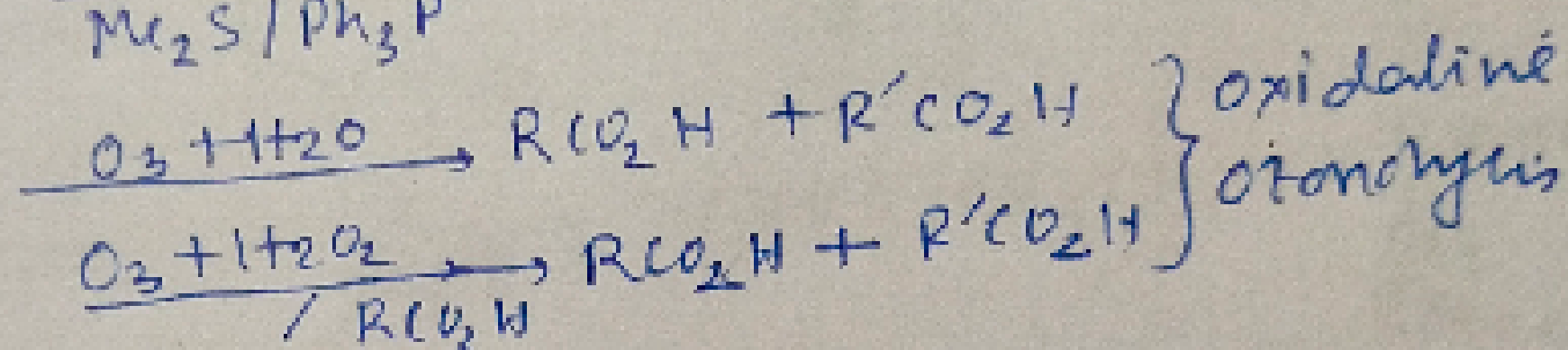
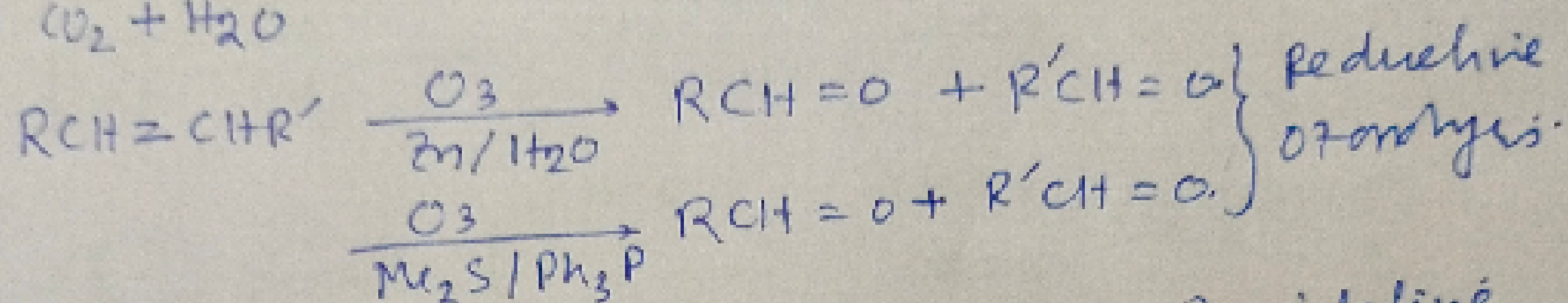


: Ozonolysis:

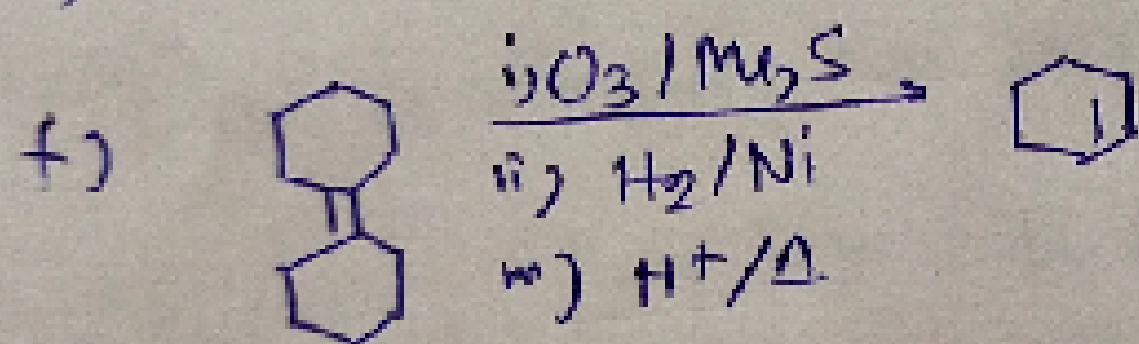
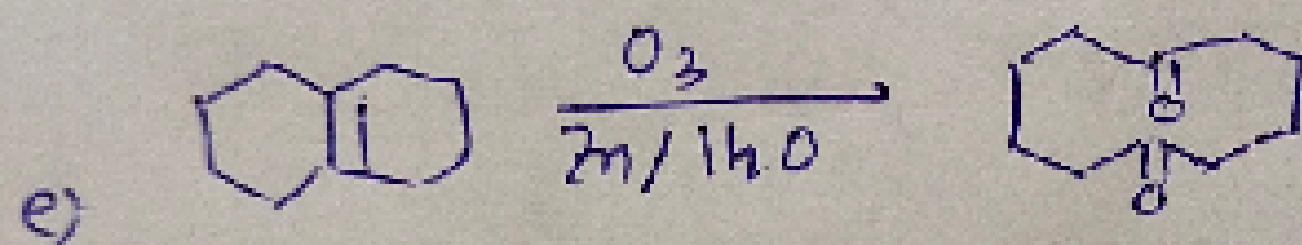
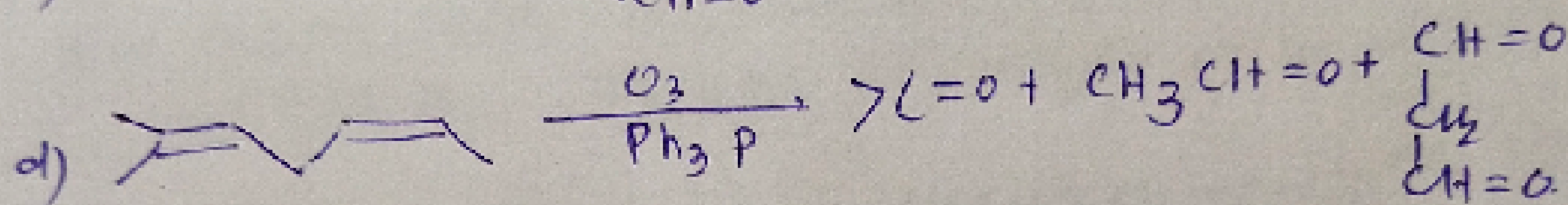
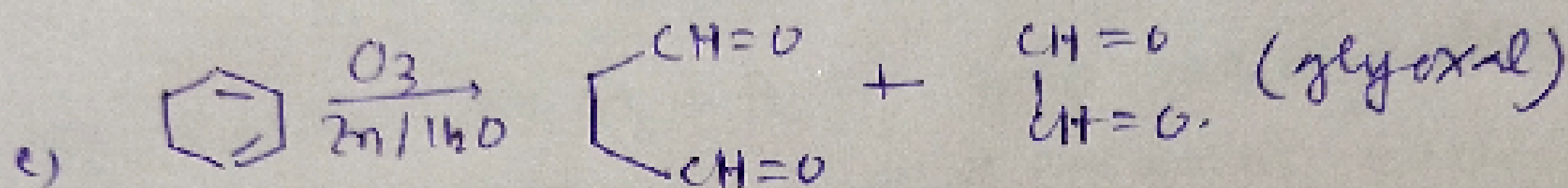
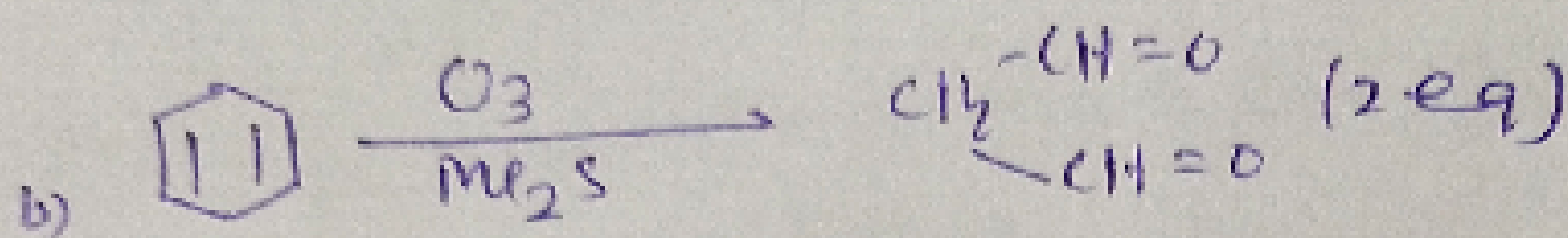
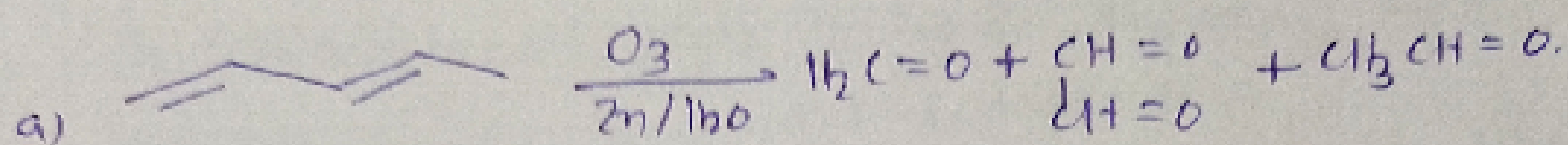
cleavage of multiple bonds ( $C=C$ ,  $C\equiv C$ ) with the help of  $O_3$  is called ozonolysis. Alkene when undergoes reaction with ozone, it gives mixture of

- Aldehyde / ketone.
- Carboxylic acid / ketone.
- $CO_2 + H_2O$

depending on  $O_3$  with other systems.

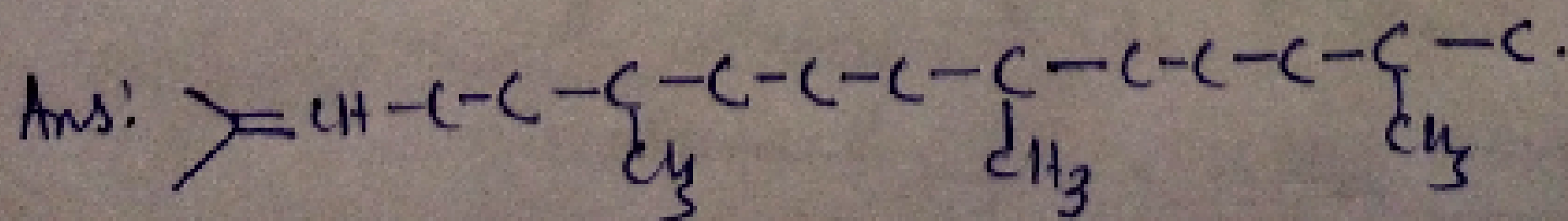
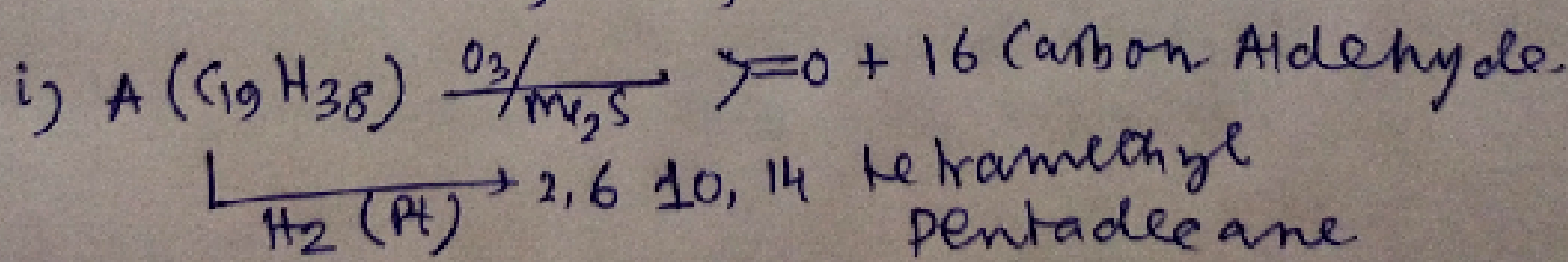
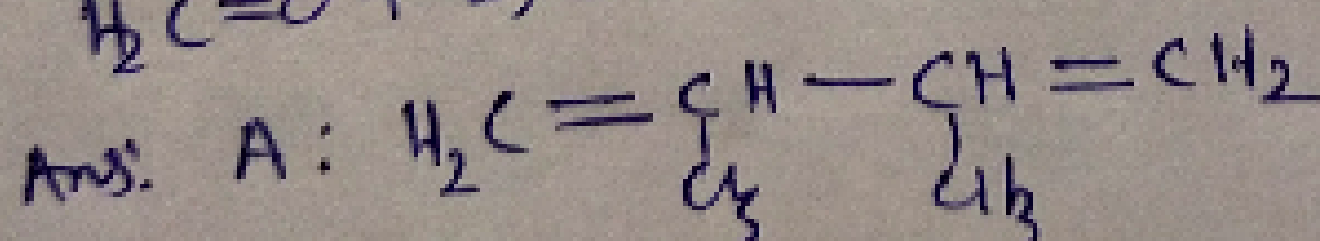


2

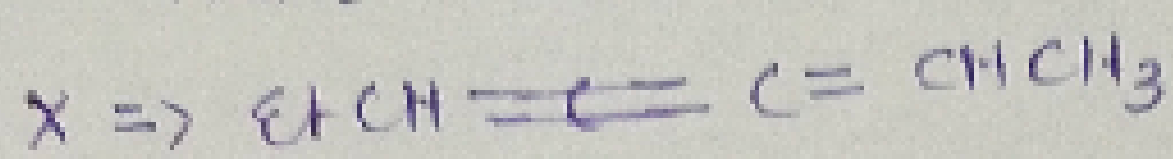
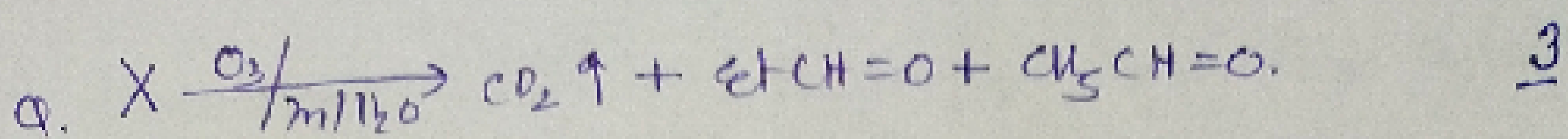


g) A (+retent with  $\text{Br}_2$  / Baeyer's reagent).  
1.  $\text{H}_2$  / Ni

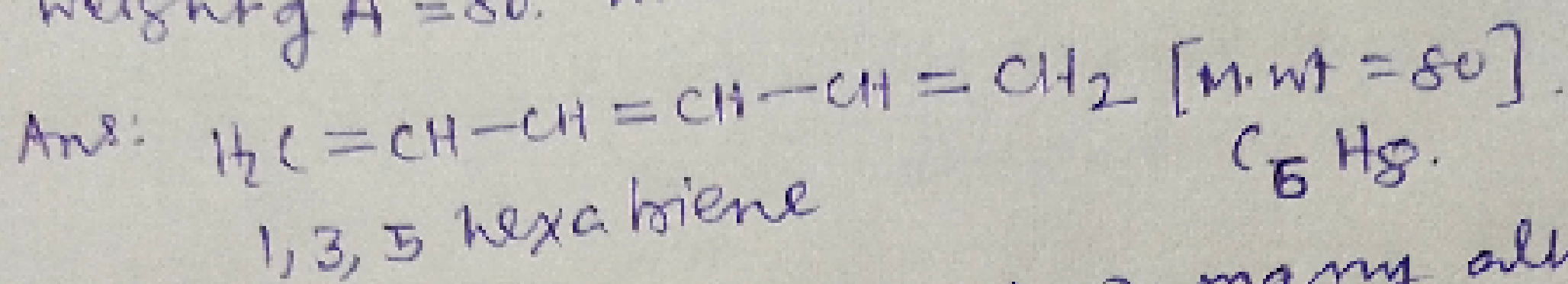
$\downarrow \text{O}_3 / \text{zn}$   
 $\text{H}_2\text{C}=\text{O} + 2, \text{diketone.}$



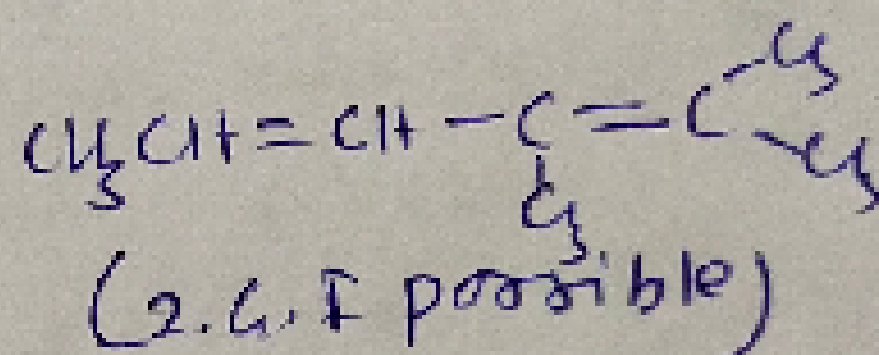
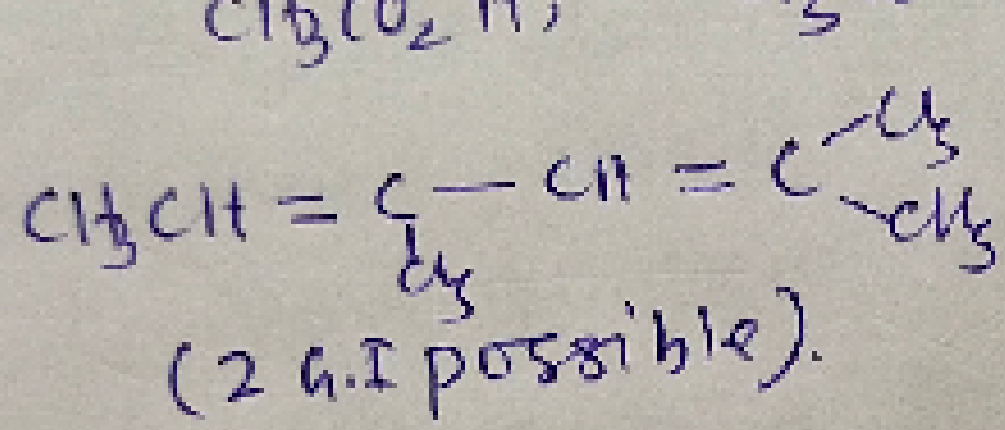




Q. A 10.02 mg sample takes 84 ml  $H_2$  gas at STP. On ozonolysis it gives  $H_2C=O$  & glyoxal. Mol. weight  $A = 80$ . What is the sample?



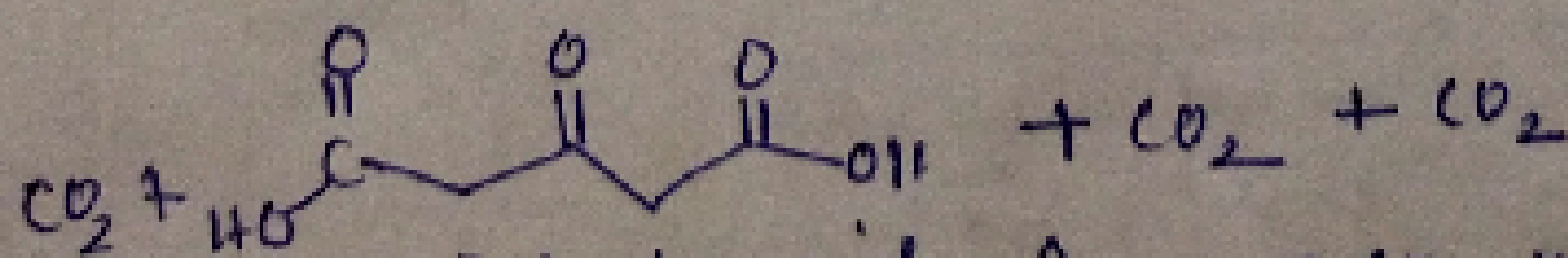
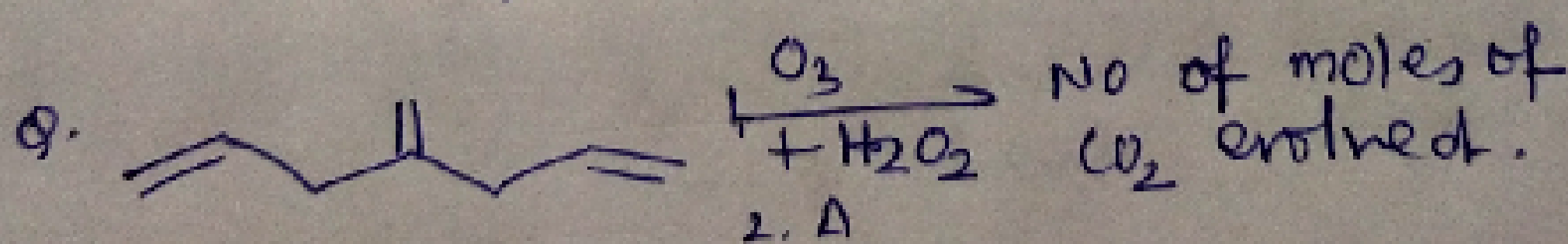
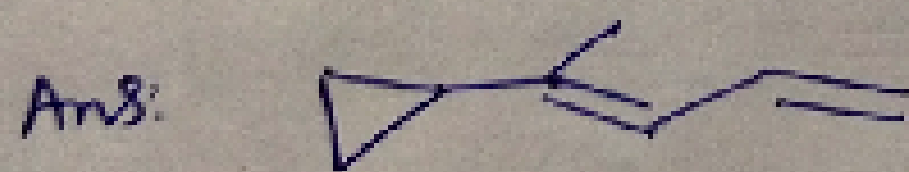
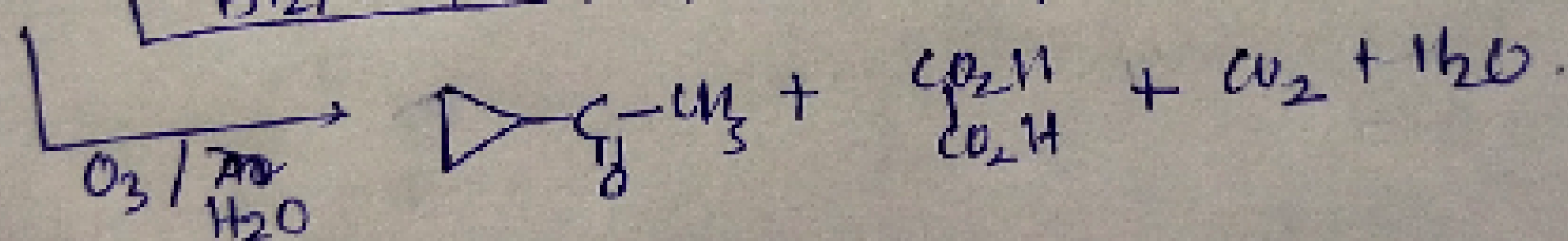
Q. On reaction with  $O_3 + H_2O_2$ , how many alkene give acetic acid, acetone & pyruvic acid.  
 $CH_3CO_2H$ ,  $CH_3COCH_3$ ,  $CH_3CO-CO_2H$ .



Total 4 alkenes are possible.

Q.  $A(C_8H_{12})$  [+ve test with  $Br_2$  / Baeyer's reagent]

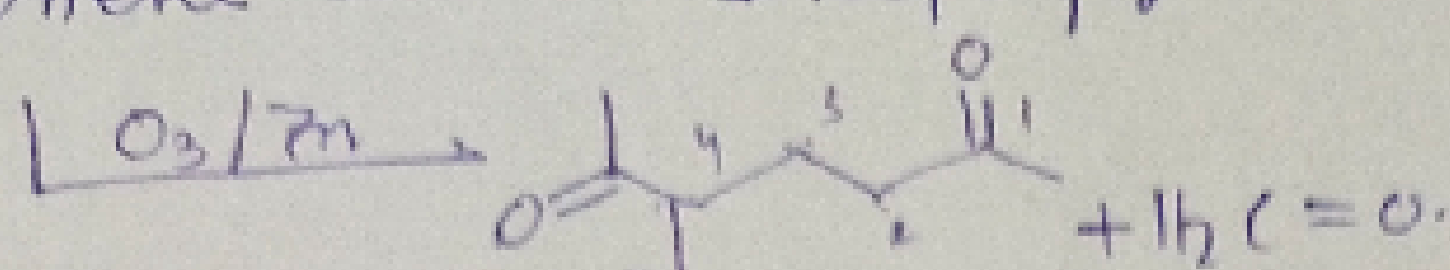
$\xrightarrow{Br_2/CCl_4}$  Tetrabromo product.



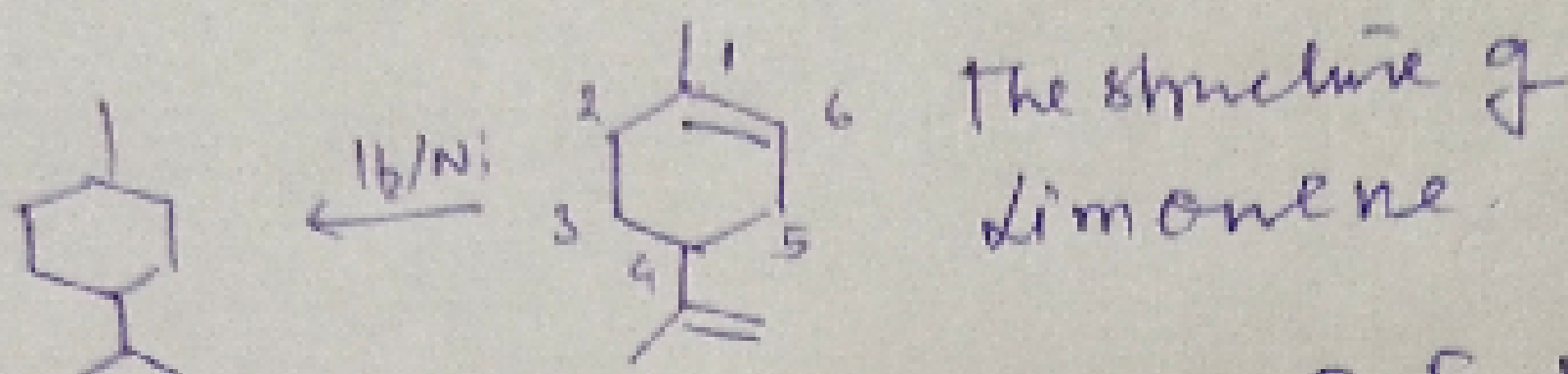
$\beta$ -ketoacid  $\xrightarrow{\Delta} 2CO_2$  more released.

Ans: 5.

Q. Limonene  $\xrightarrow{H_2/Ni}$  1-isopropyl-4-methylcyclohexane



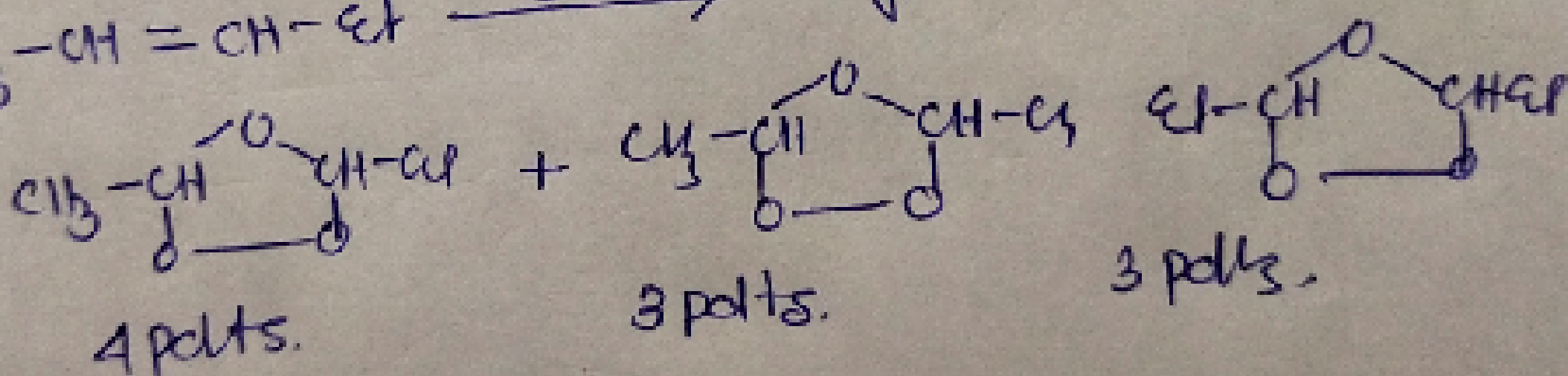
What is the structure of limonene?



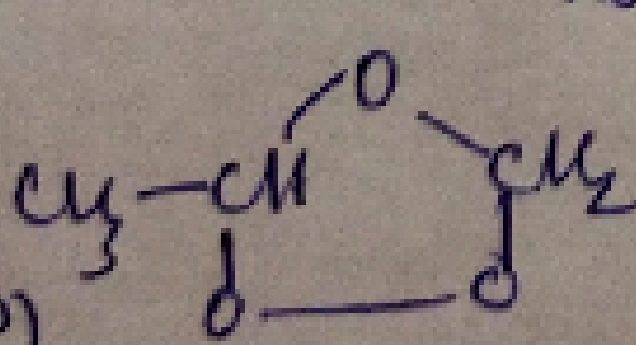
Q. There are 6 alkene A, B, C, D, E, F which reacts with  $H_2/Ni$  to give alkane with lowest molecular weight optically active compound. [no D is used in alkene] & they have general formula  $C_6H_{12}$ . How many alkenes give acetone on ozonolysis?

Ans: 0.

Q.  $CH_3-CH=CH-CH_3 \xrightarrow{O_3}$  No ozonides.



Q.  $CH_3-CH=CH_2 \xrightarrow[used as solvent]{H_2C=O / methanol}$  unexpected ozonide! (P)

Ans.   $\xrightarrow[is used as solvent]{O_3}$  unexpected product isolated at low temp. (Q)

