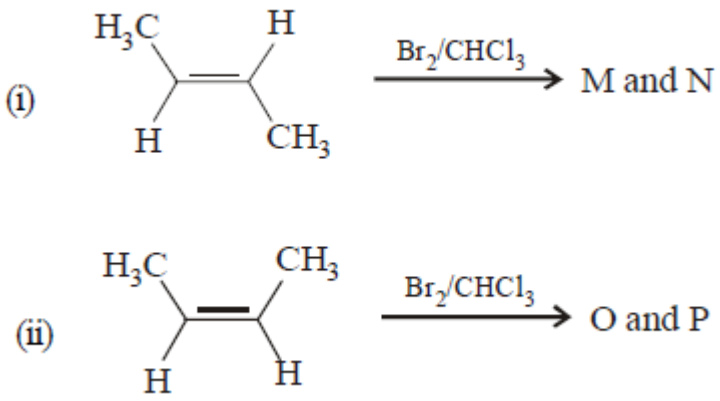
question 10. The correct statement(s) for the following addition reactions is(are):



A. O and P are identical molecules

B. (M and O) and (N and P) are two pairs of diastereomers

C. (M and O) and (N and P) are two pairs of enantiomers

D. Bromination proceeds through trans-addition in both the reactions

Solution: (B and D)

(B) (M and O) and (N and P) are two pairs of diastereomers. They have the same configuration at one chiral carbon atom and a different configuration at other chiral carbon atoms.

(D) Bromination proceeds through trans-addition in both reactions. It involves the formation of cyclic bromonium ions.