

Ethylene can be prepared in good yield by

A) $CH_3CH_2N^+(CH_3)_3I^- \xrightarrow{\text{heat}} CH_2 = CH_2 + (CH_3)_3N + HI$

B) $CH_3CH_2N^+(CH_3)_3OH^- \xrightarrow{\text{heat}} CH_2 = CH_2 + (CH_3)_3N + H_2O$

C) Both [a] and [b]

D) $CH_3CH_2NH_2 \xrightarrow{\text{heat}} CH_2 = CH_2 + NH_3$

Correct Answer: B

Solution :

[b] This is an example of Hofmann elimination which generally takes place by E_2 mechanism and the latter requires a strong base (recall that OH^- is a strong base than I^-). The NH_2^- , being a strong base, can't be eliminated easily.