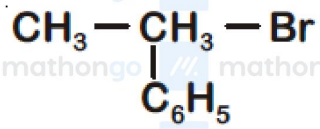
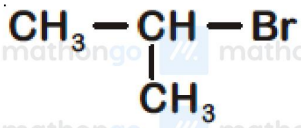
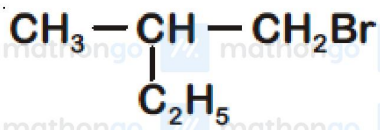
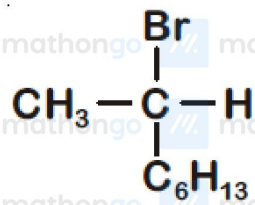
Q1 JEE Main 2020 - 2 September (Morning)

Which of the following compunds will show retention in configuration on nucleophic substitution by OH^- ion?

(A) 

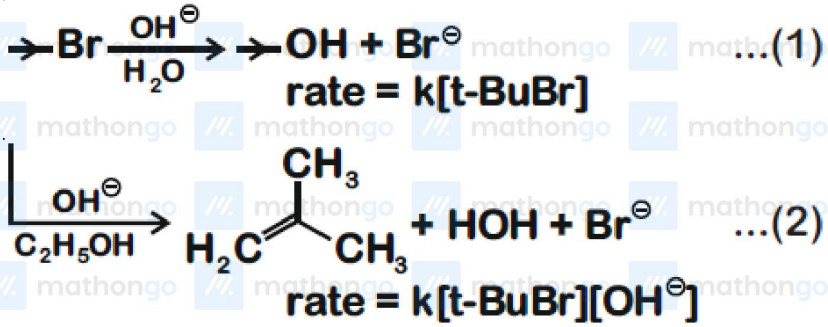
(B) 

(C) 

(D) 

Q2 JEE Main 2020 - 2 September (Evening)

Consider the reaction sequence given below:



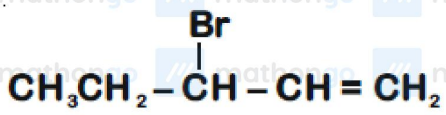
Which of the following statements is true?

(A) Changing the concentration of base will have no effect on reaction (2)
(B) Changing the concentration of base will have no effect on reaction (1)
(C) Changing the base from $\mathrm{OH}^{\ominus}$ to $^{\circ}\mathrm{OR}$ will have no effect on reaction (2)
(D) Doubling the concentration of base will double the rate of both the reactions

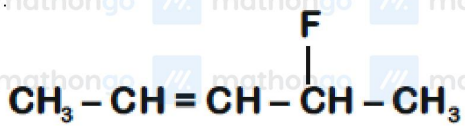
Q3 JEE Main 2020 - 2 September (Evening)

The major product obtained from E_2- elimination of 3 -bromo-2-fluoropentane is

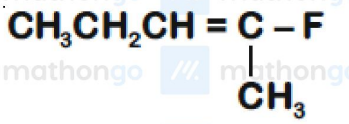
(A)



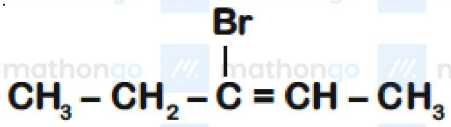
(B)



(C)

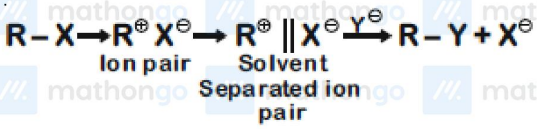


(D)



Q4 JEE Main 2020 - 3 September (Morning)

The mechanism of $\mathrm{S_N}1$ reaction is given as



A student writes general characteristics based on the given mechanism as
(a) The reaction is favoured by weak nucleophiles.
(b) $R^{\oplus}$ would be easily formed if the substituents are bulky.
(c) The reaction is accompanied by racemization.

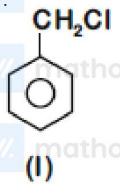
(d) The reaction is favoured by non-polar solvents.

Which observations are correct?

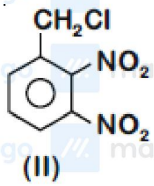
(A) (b) and (d)
(B) (a) and (c)
(C) (a) and (b)
(D) (a), (b) and (c)

Q5 JEE Main 2020 - 3 September (Evening)

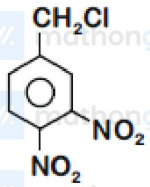
The decreasing order of reactivity of the following compounds towards nucleophilic substitution (S_N2) is



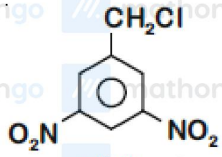
(I)



(II)



(III)

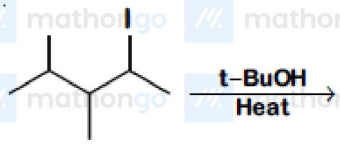


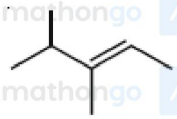
(IV)

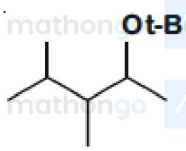
(A) $(II) > (III) > (IV) > (I)$
(B) $(II) > (III) > (I) > (IV)$
(C) $(\mathrm{III}) > (\mathrm{II}) > (\mathrm{IV}) > (\mathrm{I})$
(D) $(IV) > (II) > (III) > (I)$

Q6 JEE Main 2020 - 3 September (Evening)

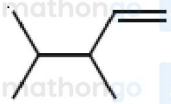
The major product in the following reaction is



(A) 

(B) 

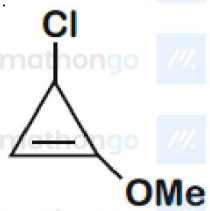
(C) 

(D) 

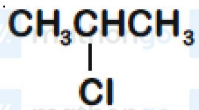
Q7 JEE Main 2020 - 4 September (Morning)

The decreasing order of reactivity of the following organic molecules towards $AgNO_3$ solution is

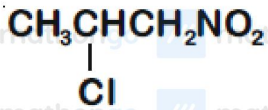
(A)



(B)



(C)

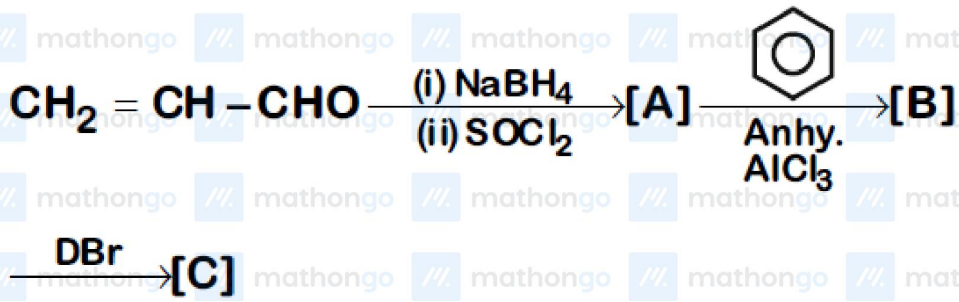


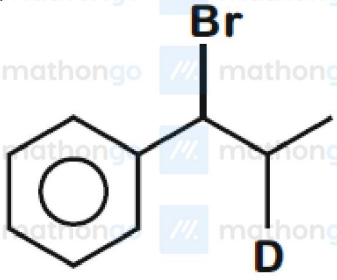
(D)

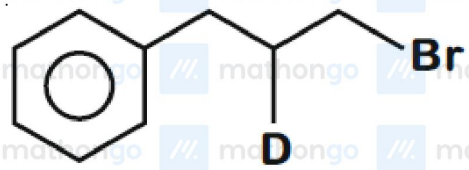
(A) $(B) > (A) > (C) > (D)$
(B) $(A) > (B) > (D) > (C)$
(C) $(A) > (B) > (C) > (D)$
(D) $(C) > (D) > (A) > (B)$

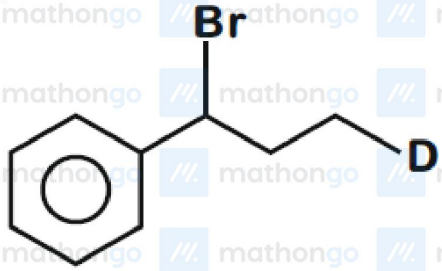
Q8 JEE Main 2020 - 4 September (Evening)

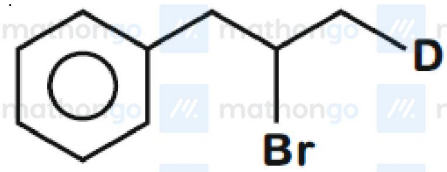
The major product [C] of the following reaction sequence will be



(A)


(B)


(C)


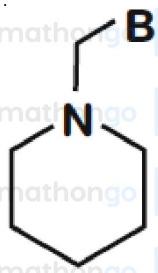
(D)


Q9 JEE Main 2020 - 4 September (Evening)

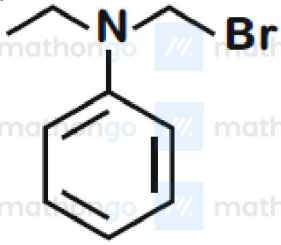
Which of the following compounds will form the precipitate with aq. AgNO solution most readily?

(A)

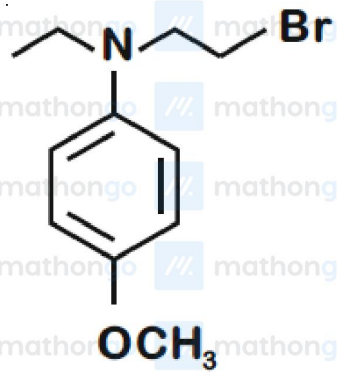
(B)



(C)

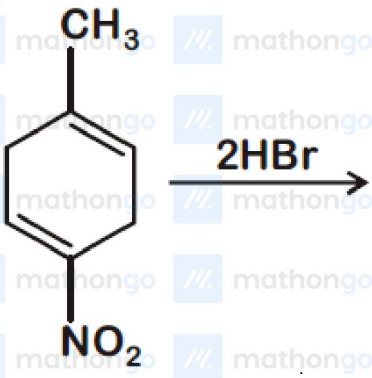


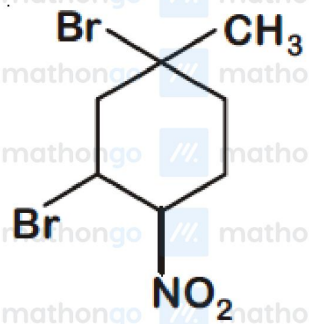
(D)



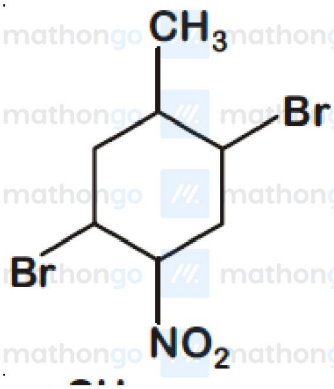
Q10 JEE Main 2020 - 6 September (Morning)

The major product of the following reaction is

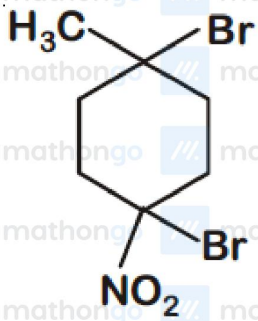




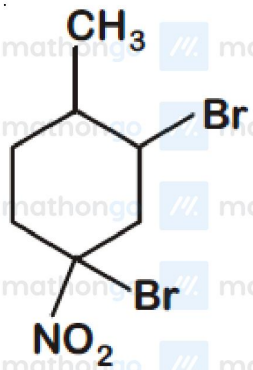
(A)



(B)



(C)

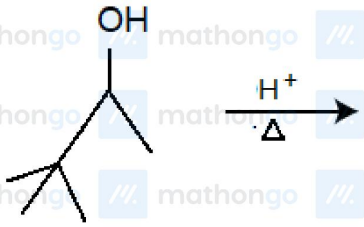


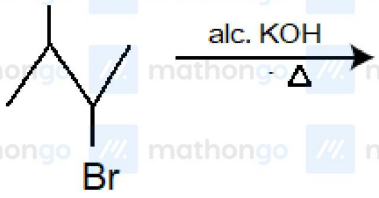
(D)

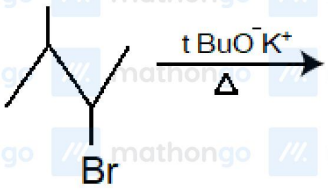
Q11 JEE Main 2020 - 7 January (Morning)

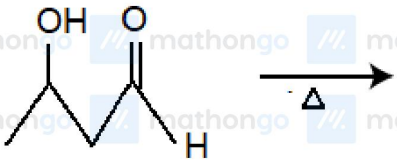
Consider the following reactions :

Which of these reaction(s) will not produce Saytzeff product ?

(A) 

(B) 

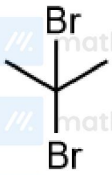
(C) 

(D) 

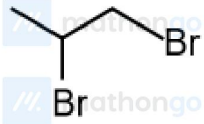
(A) Only C
(B) Only B
(C) A, C & D
(D) B & D

Q12 JEE Main 2020 - 7 January (Morning)

1-methyl-ethylene oxide $\xrightarrow[HBr]{\text{excess}} X$ Product 'X' will be

(A) 

(B)

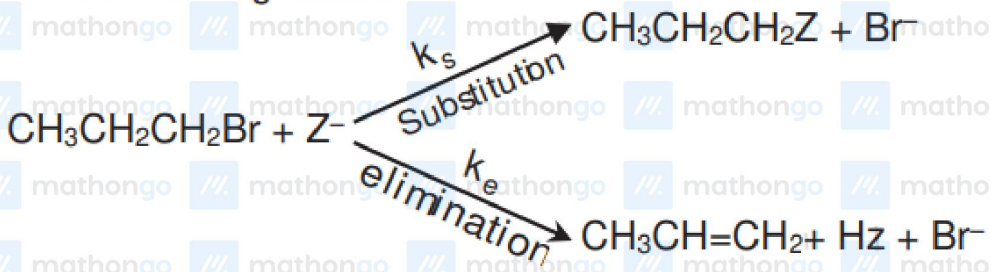


(C)

(D)

Q13 JEE Main 2020 - 7 January (Evening)

For the following reactions



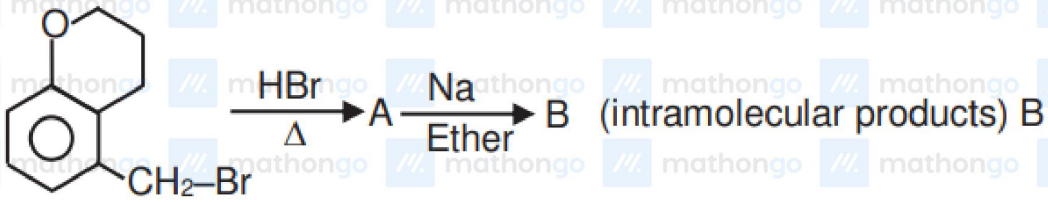
where,

$Z^- = CH_3CH_2O^-$ (A) or $H_3C-\underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}}-O^-$ (B)

k_s and k_e, are, respectively, the rate constants for substitution and elimination, and $\mu = \frac{k_s}{k_e}$, the correct option is _____.

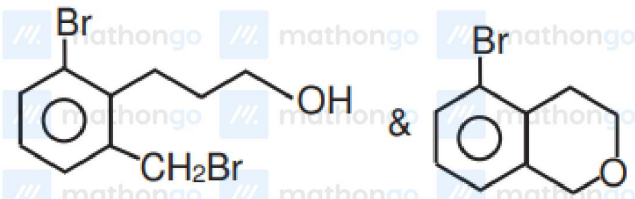
(A) $\mu_A > \mu_B \; and \; k_e(B) > k_e(A)$
(B) $\mu_A > \mu_B \; and \; k_e(A) > k_e(B)$
(C) $\mu_B > \mu_A \; and \; k_e(B) > k_e(A)$
(D) $\mu_B > \mu_A \; and \; k_e(A) > k_e(B)$

Q14 JEE Main 2020 - 7 January (Evening)

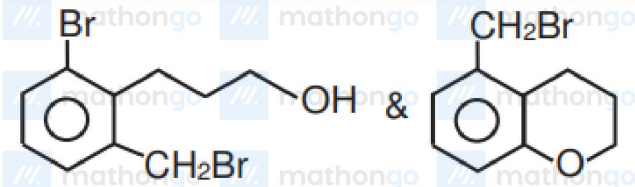


(intramolecular products) B

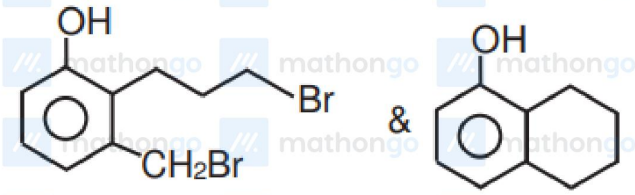
(A)



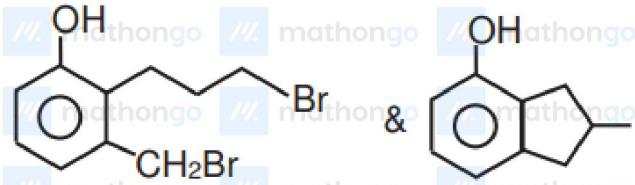
(B)



(C)



(D)

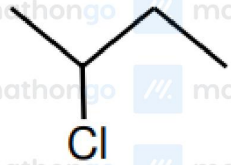


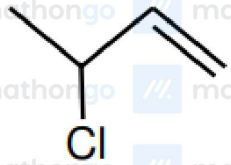
Q15 JEE Main 2020 - 8 January (Morning)

The decreasing order of reactivity towards dehydrohalogenation (E_1) reaction of the following compounds is :

(A) 

(B) 

(C) 

(D) 

(A) $C > B > D > A$
(B) $D > B > C > A$
(C) $B > C > D > A$
(D) $A > B > C > D$

Answer Key

Q1 (C)	**Q2** (B)	**Q3** (C)	**Q4** (D)
Q5 (C)	**Q6** (C)	**Q7** (A)	**Q8** (C)
Q9 (B)	**Q10** (A)	**Q11** (A)	**Q12** (B)
Q13 (A)	**Q14** (C)	**Q15** (B)	