CHEMISTRY

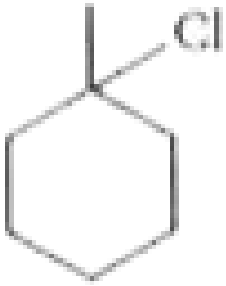
BOOKS - MS CHOUHAN

ALKYL HALIDES (ELIMINATION REACTION)

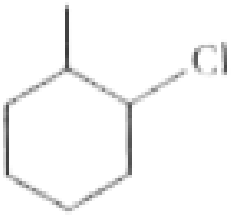
Level 1

1. Which of the following alkyl halide gives only one product (excluding stereoisomer) when undergo E_2 reaction ?

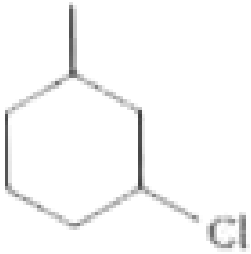
(E_2 = elimination bi - molecular)

A. 

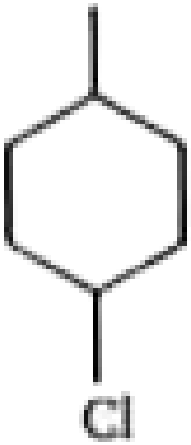
B.



C.



D.



Answer: D

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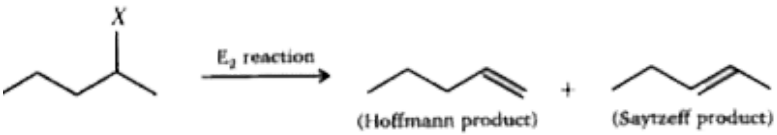
2. 

In the above reaction, maximum Saytzeffproduct will obtained when:

In the above reaction Hoffmann product is major when X is :

A. $X = -I$, -F

B. $X = -Cl$, -Cl

C. $X = -Br$, -Br

D. $X = -F$, -F

Answer: A

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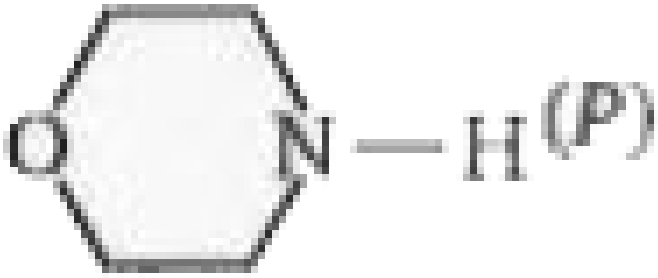
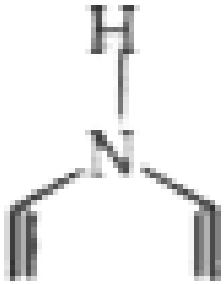
3.



when (P) undergoes Hoffmann exhaustive methylation (twice) then the product obtained will be :

A.

B.



C.

D.

Answer: A

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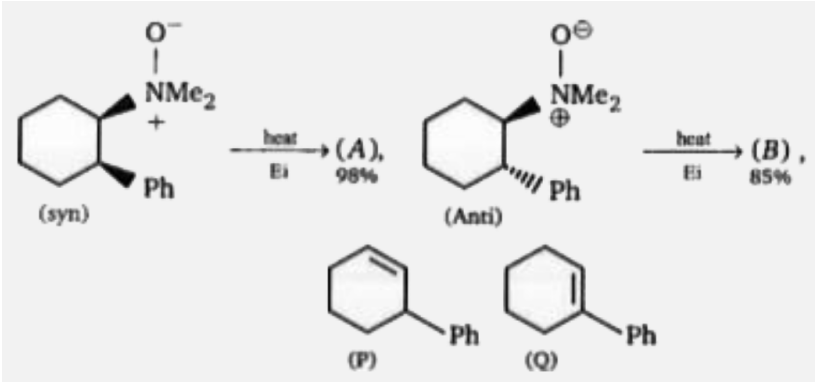
4. 

Product (A) & (B) ofthe above reaction is

A. A=P,B=P

B. A=Q,B=Q

C. A=P,B=Q

D. A=Q,B=P

Answer: C

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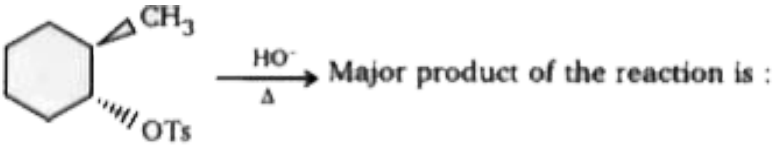
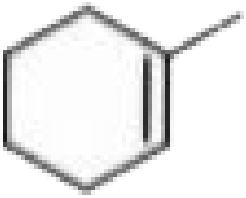
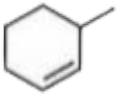
5. Complete the following reaction



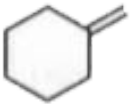
A.



B.



C.



D.

Answer: B

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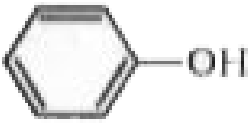
6. Which ofthese dehydrates most easily?

A. $CH_3 - CH_2 - CH_2 = OH$

B. 

C. 

D. $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2 - OH$

Answer: B

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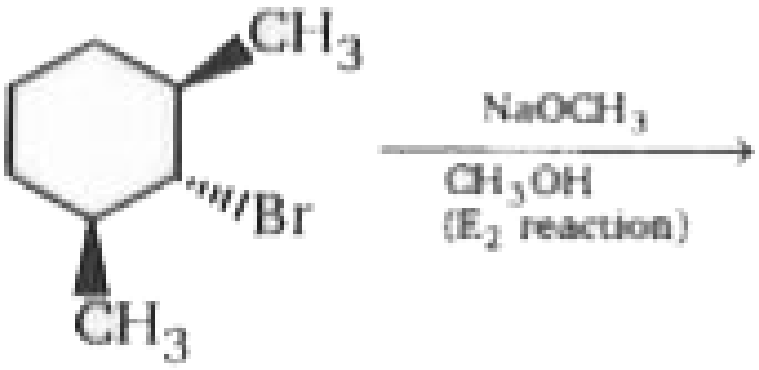
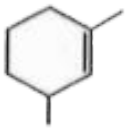
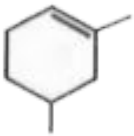
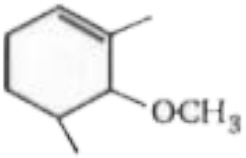
7. 

Product,

Product of the reaction is :

A. 

B. 



C.

D. No reaction

Answer: D

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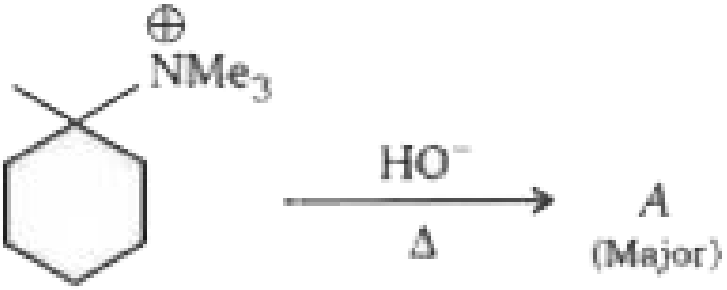
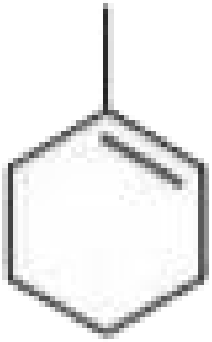
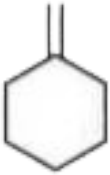
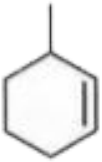
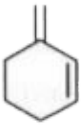
8. Complete the following reaction



A. 

B. 

C. 

D. 

Answer: B

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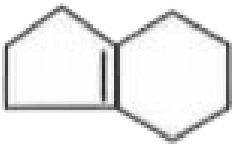
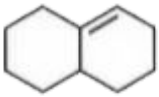
9. Complete the following reaction

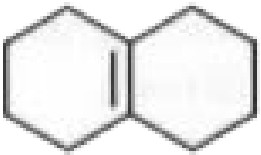
A.



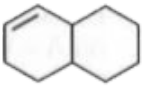
B.



C.



D.



Answer: C

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10. In which ofthe following reaction Saytzeffalkene is major product?

A. $CH_3 - CH_2 - \overset{CH_3}{\underset{CH_3}{\overset{|}{\underset{|}{C}}}} - \overset{\oplus}{N}Me_3 \xrightarrow[\Delta]{HO^-}$

B. $CH_3 - CH_2 - \underset{F}{\underset{|}{CH_2}}CH - CH_3 \xrightarrow[\Delta]{EtO^-}$

C. $CH_3 - CH_2 - \overset{CH_3}{\underset{Br}{\overset{|}{\underset{|}{C}}}} - CH_3 \xrightarrow[\Delta]{t-BuOK}$

D. $CH_3 - CH_2 - CH_2 - \overset{Br}{\underset{CH_3}{\overset{|}{\underset{|}{C}}}} - CH_3 \xrightarrow[\Delta]{CH_3OK}$

Answer: D

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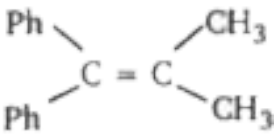
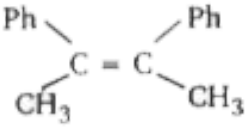
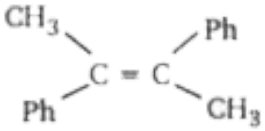
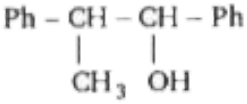
11. $\xrightarrow[(K_2\text{reaction})]{alc.KOH}$ Major product ofthe reaction is

A. 

B. 

C. 

D. 

Answer: C

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12. The conversion of2, 3-dibromobutane to 2-butene with Zn is

A. Redox reaction

B. α- Elimination

C. β- Elimination

D. Both α - elimination and redox reaciton

Answer: C

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13. 1, 3-Dibromopropane is heated with zinc dust in ether. The product formed is :

A. propene

B. propane

C. cyclopropane

D. 3-bromopropane

Answer: D

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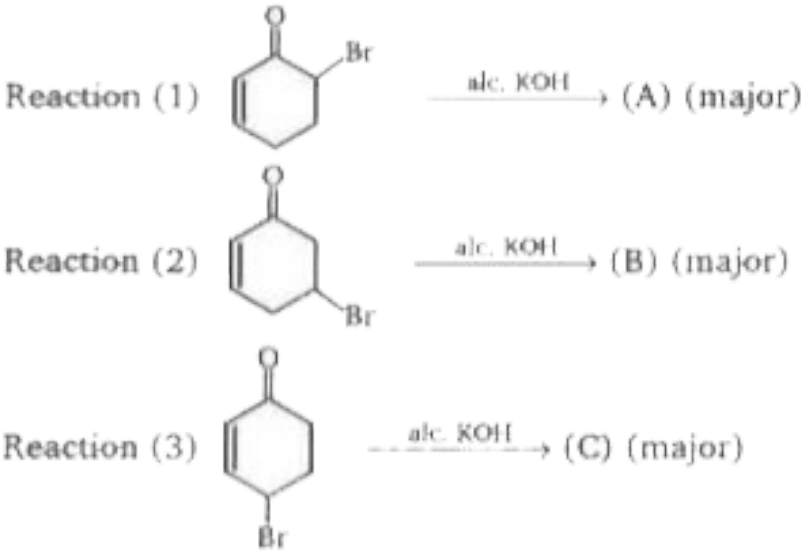

14.

Product obtained in above reactions (1),(2) & (3) is :

A. A = B but C is different

B. A = C, but B is different

C. B = C, but A is different

D. A = B = C all product are identical

Answer: D

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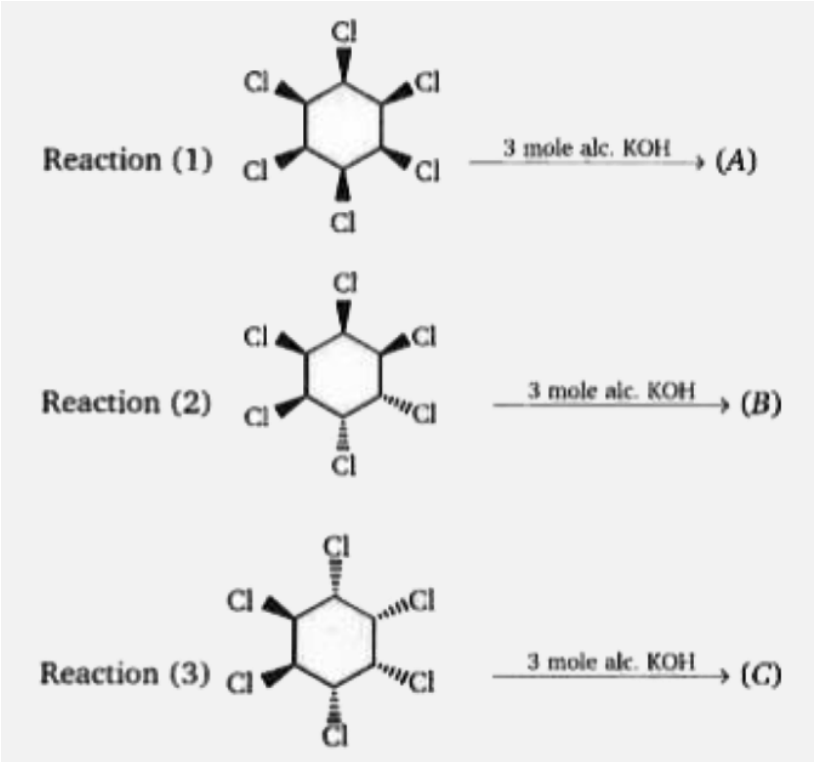
15.



Product obtained in above reactions (1),(2) & (3)

A. A = B, C is different

B. A = C, B is different

C. B = C, A is different

D. A = B = C is same

Answer: D

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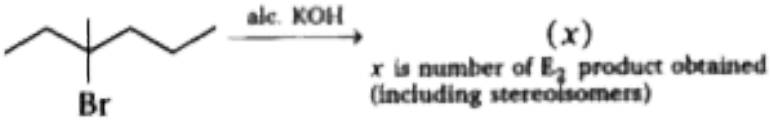
16. Complete the following reaction



Find (x).

A. 3

B. 4

C. 5

D. 6

Answer: C

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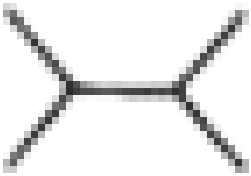
17. $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - \underset{\underset{Br}{|}}{CH_3CH_3} - \xrightarrow[\Delta]{\text{EtoH}} (A)$

Major product (A) is

A. 

B. 

C. 

D. 

Answer: B

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18. Which one ofthe following compound will be least susceptible to elimination ofhydrogen bromide?

A. $Br - CH_2 - CH_2 - NO_2$

B. $Br - CH_2 - CH_2 - CH_3$

C. $Br - CH_2 - CH_2 - CN$

D. $Br - CH_2 - CH_2 - CO_2Et$

Answer: B

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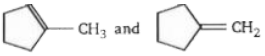
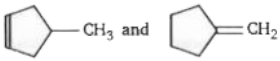
19. Two alkenes, X(91% yield) and Y(9% yield) are formed when the following compound is heated.

The structures of X and Y, respectively are :

A. 

B. 

C. 

D. 

Answer: C

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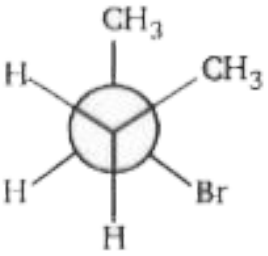
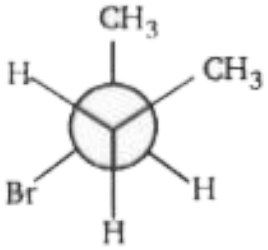
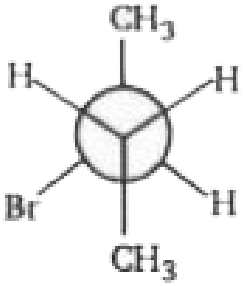
20. In the dehydrohalogenation of2-bromobutane, which conformation leads to the formation ofcis-2-butene ?

A. 

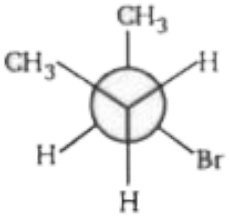
B.



C.



D.



Answer: A

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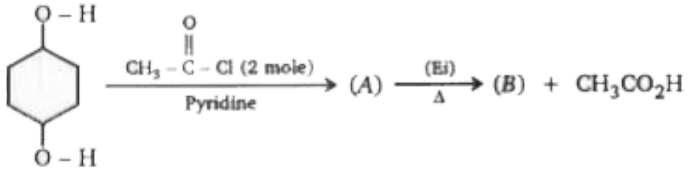
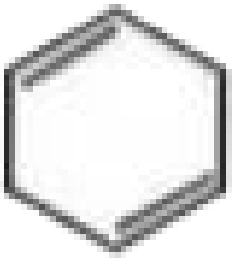


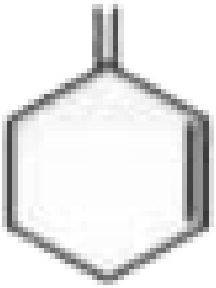
21.

Product (B) of given reaction is :

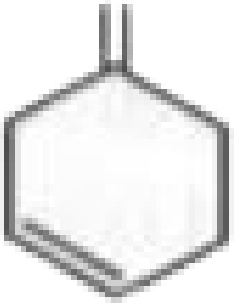


A.

B.



C.



D.

Answer: B

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22. What produict will be formed from Hoffmann exhaustive methylation of following compound ?

$$Me_2CHCH_2NHCH_2CH_2Me \xrightarrow[(ii)\,Ag_2O]{(i)\,CH_3-1\,(excess)} Product$$

A. $Me-CH=CH_2$

B. $H_2C=CH_2$

C. $CH_3-\underset{\underset{CH_3}{|}}{C}=CH_2$

D. $CH_3-\underset{\underset{Me}{|}}{C}H-CH=CH_2$

Answer: A

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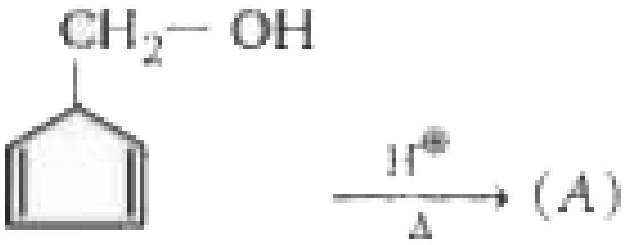
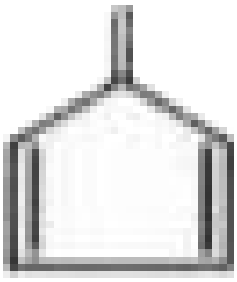
23. Complete the following reaction



A.



B.

C.

D.

Answer: B

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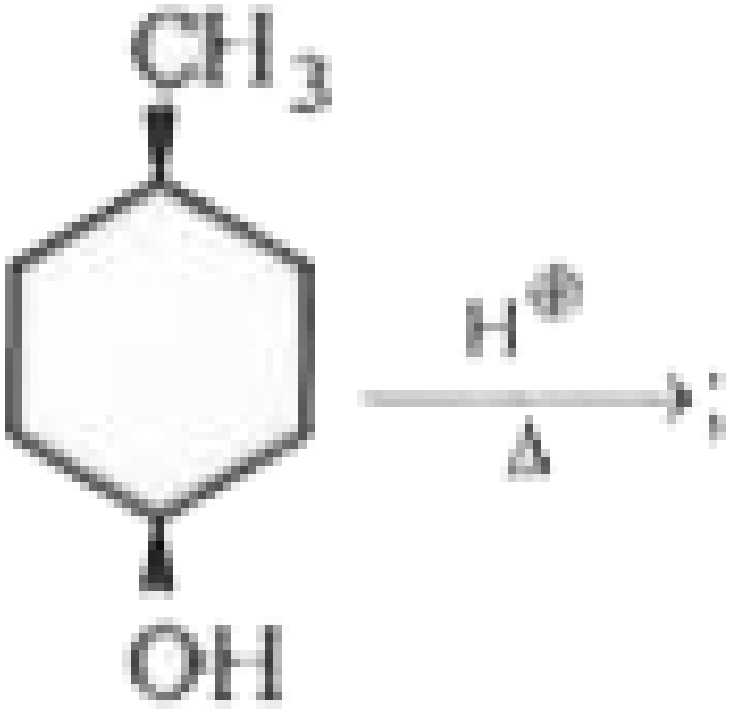
24. 

, Products obtained are :

A. Racenic

B. Diastereomers

C. G.I

D. Positional isomers

Answer: A

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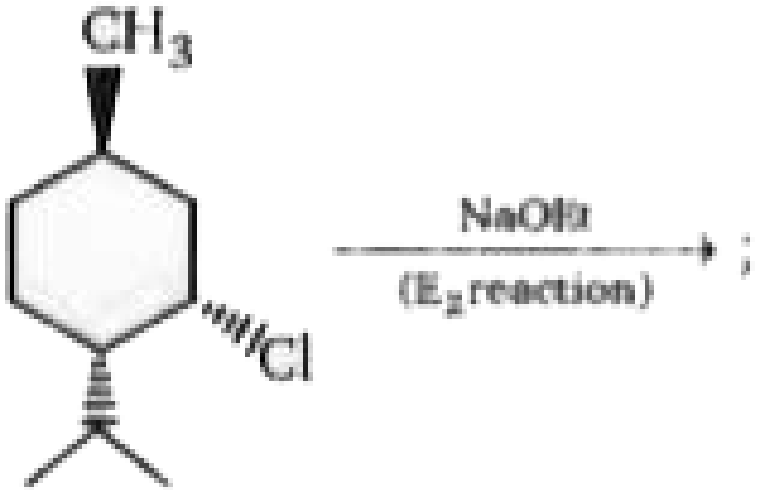
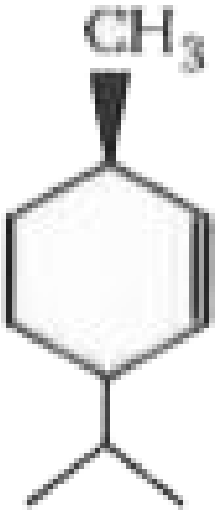
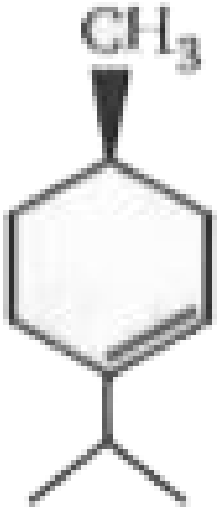


25. Major

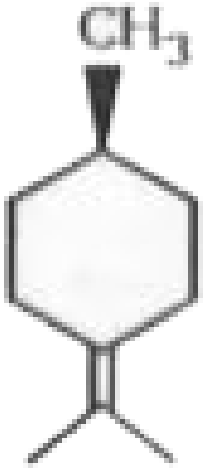
product of the reaction is :



A.



B.



C.

D.

Answer: B

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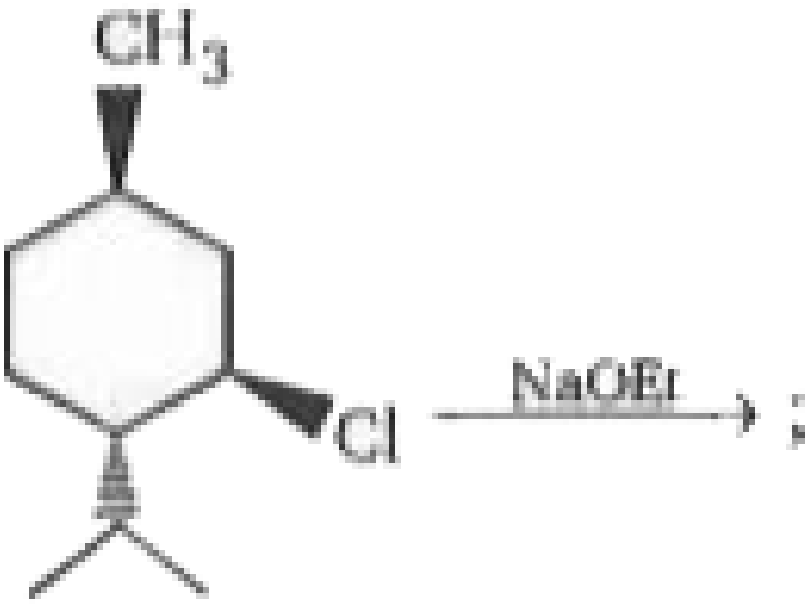
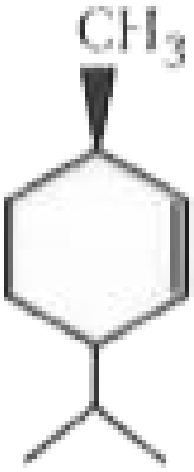
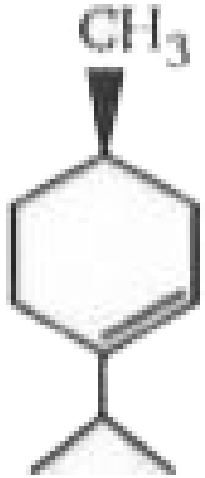


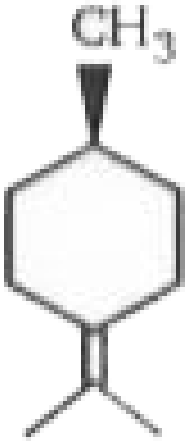
26. Major product of the reaction is :

A. 

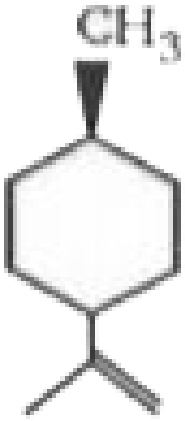
B.



C.



D.



Answer: A

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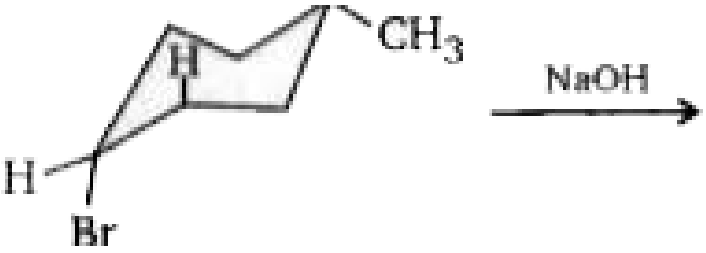
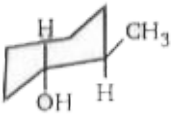
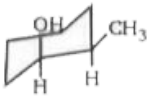
27. The E_2 product of the following reaction will be ?



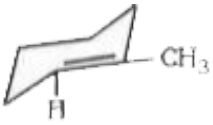
A.



B.



C.



D.

Answer: D

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28. An halide $C_5H_{11}Br$ on treatment with alc. KOH give 2-pentene only. The halide will be :

A. $CH_3 - CH_2 - CH_2 - CH_2 - CH_2 - Br$

B. $CH_3 - CH_3 - CH_2 - \underset{\underset{Br}{|}}{CH} - CH_3$

C. $CH_3 - CH_2 - \underset{\underset{Br}{|}}{CH} - CH_2 - CH_3$

D. $CH_3 - \overset{\overset{CH_3}{|}}{C}H - \underset{\underset{Br}{|}}{C} - CH_3$

Answer: C

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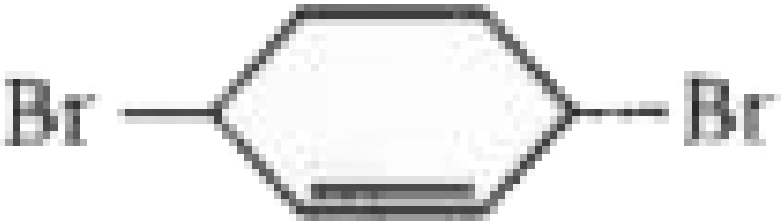
29. End product CD) in the given sequence is:



$$\xrightarrow[\text{2 molar equivalent}]{CH_2NHCH_3} (A) \xrightarrow{BaO} (B) \xrightarrow[(\text{2molar eqivalent})]{(CH_3I)} (C) \xrightarrow{Ag_2O\,/\,H_2O} (D) + (CH_3)_3N$$

A.

B.

C.

D.

Answer: B

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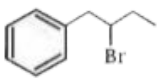
30. For each of the following pairs of E_2 reaction, select the one that occurs withthe greater rate constant

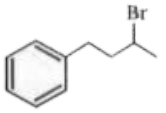
(1) $CH_3CH_2CH_2Cl + CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - O^-$

(2) $CH_3CH_2CH_2I + CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - O^-$

(3) $H_3C - \underset{\underset{Br}{|}}{CH} - CH_3 + CH_3O^-$

(4) $H_3C - \underset{\underset{Br}{|}}{CH} - CH_3 + CH_3S^-$

(5) 

(6) 

A. 2,4,6

B. 1,3,5

C. 2,3,5

D. 2,4,5

Answer: C

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31.

$$CH_3 - \overset{\overset{Br}{|}}{\underset{\underset{Br}{|}}{C}} - \overset{\overset{Br}{|}}{\underset{\underset{Br}{|}}{C}} - CH_3 \xrightarrow{xNaNH_2} (yCH_3I) \rightarrow CH_3 - C \equiv C - C \equiv \ - CH_3$$

x and y mole consumed.

x and y mole consumed .

Value of x + y =

A. 5

B. 6

C. 7

D. 8

Answer: D

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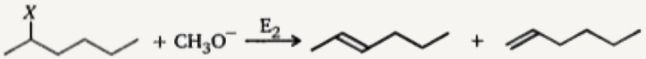
32. The following bimolecular elimination reaction (E_2) is carried out with different halogen leaving groups. The per cent yield of the two products (2·hexene and I-hexene) for each leaving group is listed below.



Leaving group	Conj. Acid pK_a	%-yield of 2-hexene	%-yield of 1-hexene
$X = I$	- 10	81%	19%
$X = Br$	- 9	72%	28%
$X = Cl$	- 7	67%	33%
$X = F$	3.2	30%	70%

Which ofthe following statement is (are) true concerning this series of E_2 reactions?

A. Based on the pK_s 's of the conjugate acid , I^- is the best leaving group and F^- is the pooreset leaving group

B. When $I^{-}{}^{B}r^{-\text{and}}Cl^{-}$ are used as leaving groups, Zaitsev's rule is followed.

C. F^{-} is the stronger base (and therefore the poorest leaving group) and the transition statefor reactionwithfluoride as theleavinggrouphas theleastdoublebondcharacter

D. a,b,c are true

Answer: D

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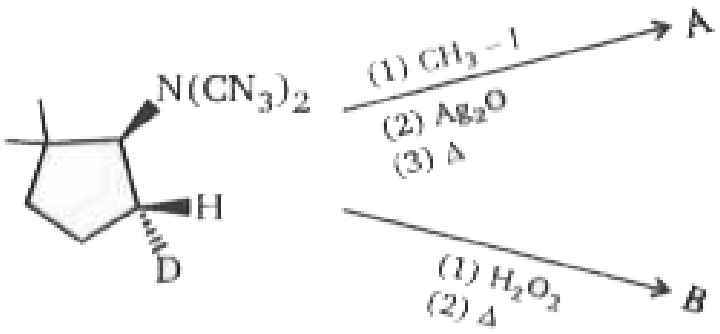
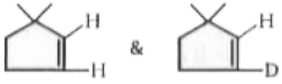
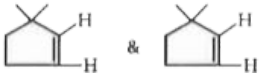
33.



Product (A) & (B) respectively are :

A. 

B. 

C. 

D. 

Answer: A

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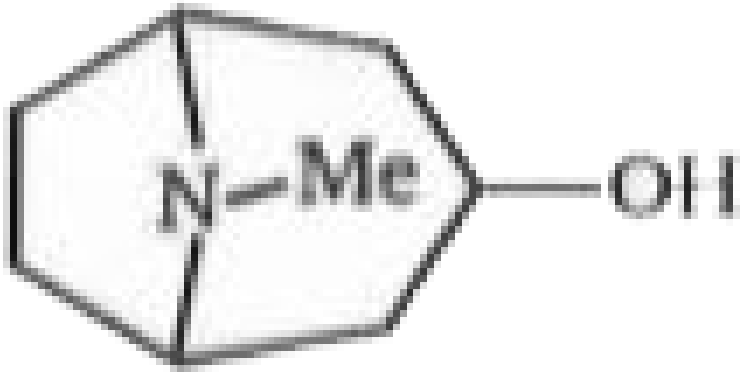
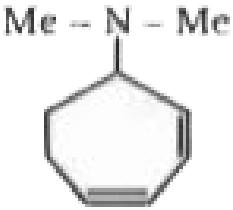


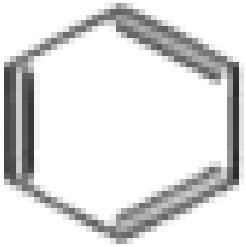
34. *[Math Processing Error]*

Product in above reaction is :

A. 

B. 

C. 

D. 

Answer: A

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35. Major product obtained in the reaction of I-phenyl-2-bromobutane with NaOMe is

A. (E)-l-phenylbut-l-ene

B. (E)-1-phenylbut-2-ene

C. I-phenyl-2-ethoxybutane

D. (Z)-1-phenylbut-2-ene

Answer: A

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36. Which of the following alkyl halides give most complex mixture of alkene in an E_2 reaction ?

A. $CH_3 - CH_2 - CH_2 - CH_2 - Br$

B. $CH_3 - CH_2 - CH_2 - \underset{\underset{Br}{|}}{CH} - CH_3$

C. $CH_3 - CH_2 - \underset{\underset{Br}{|}}{CH} - CH_2 - CH_3$

D. $CH_3 - \underset{\underset{Br}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2 - CH_3$

Answer: B

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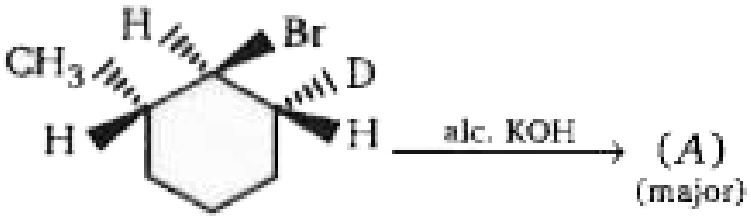
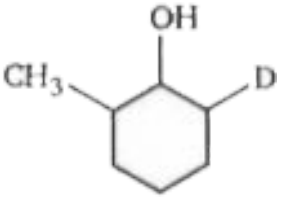
37.

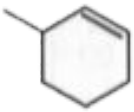


Product (A) is :

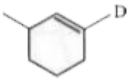
A.

B.





C.



D.

Answer: C

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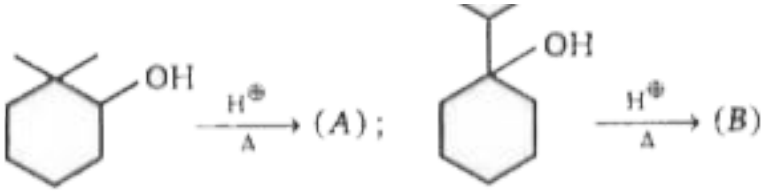
38.



Sum of number of α- hydrogen present is compound A + B is :

A. 18

B. 19

C. 20

D. 21

Answer: C

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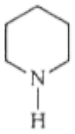
39.

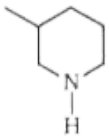
$$\underset{(3)\ \Delta}{\overset{(1)\ (excess CH_3I / K_2CO_3)}{(2)\ Ag_2\emptyset / H_2O}} (B) \xrightarrow[(iii)\ \Delta]{(i)\ excess CH_3I / K_2CO_3 \quad (ii)\ Ag_2O} H_2C = CH - \underset{CH_3}{\underset{|}{C}}\ H - CH =$$

j

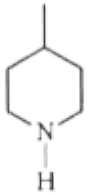
Identify A :



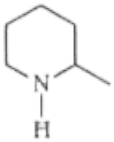
A.



B.



C.



D.

Answer: C

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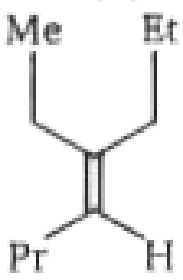
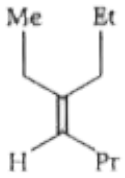
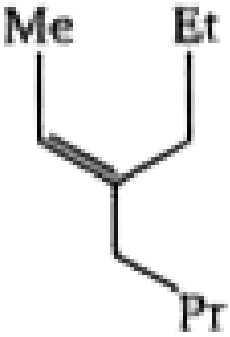
40. $CH_3 - CH_2 - \underset{\underset{CH_2\,(n-Pr)}{|}}{\overset{\overset{Br}{|}}{C}} - CH_3CH_2 - Et \xrightarrow{alc.KOH} \underset{\text{major}}{A}$

A.

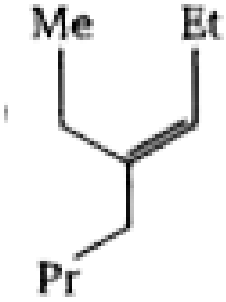




B.



C.



D.

Answer: C

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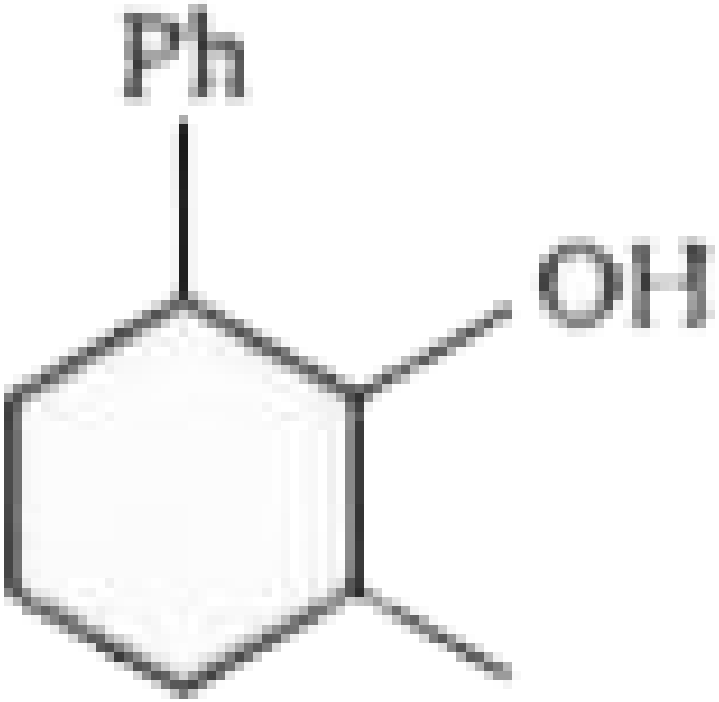
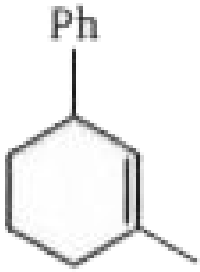
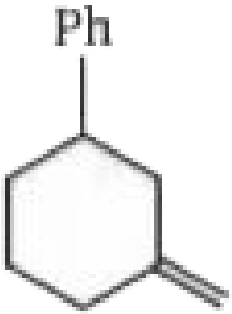


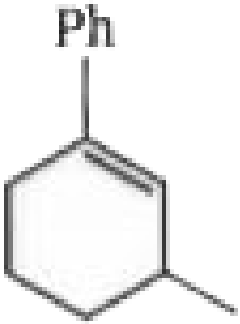
41. $\xrightarrow[\Delta]{H_3PO_4}$

Major product obtained by dehydration of given alcohol is :

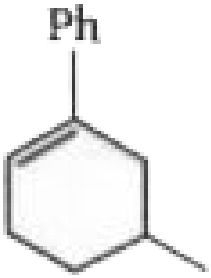
A. 



B.



C.



D.

Answer: C

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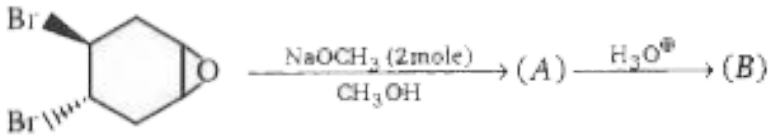
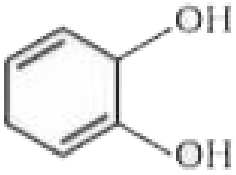
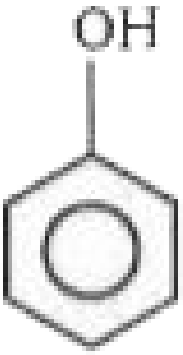
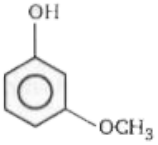
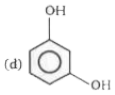
42. 

Product (B) of the reaction is :

A. 

B. 

C. 



D.

Answer: B

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43. $Ph - \underset{\underset{Br}{|}}{CH} - CH_2 - \underset{\underset{Br}{|}}{CH_2} \xrightarrow[\Delta]{Zn-cu} Product$

Product of the above reaction is :

A. $Ph - CH = CH - CH_2 - Br$

B. 

C. $PH - CHBr - CH = CH_2$

D. $Ph - C = C - CH_3$

Answer: B

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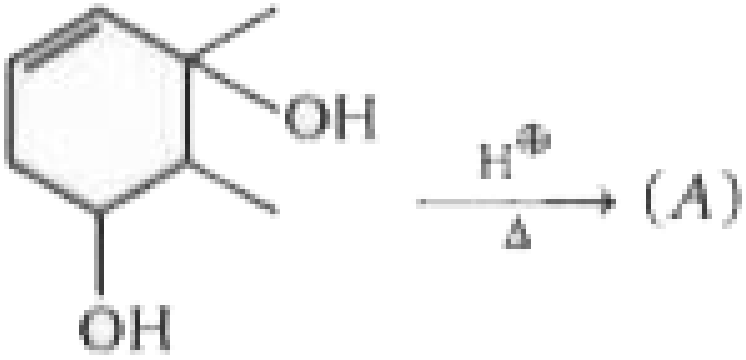
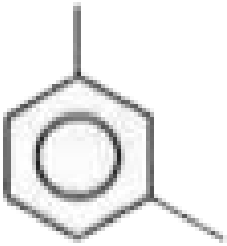
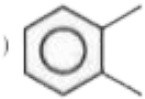
44. Complete the following reaction



A. 

B. 

C.

D.

Answer: B

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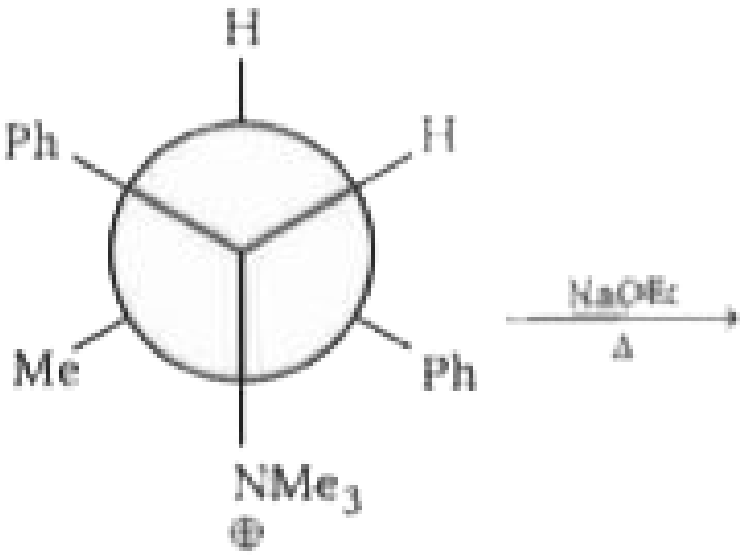
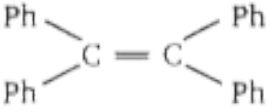
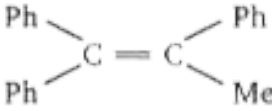
45. Complete the following reaction



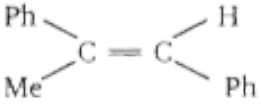
A.



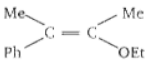
B.



C.



D.



Answer: C

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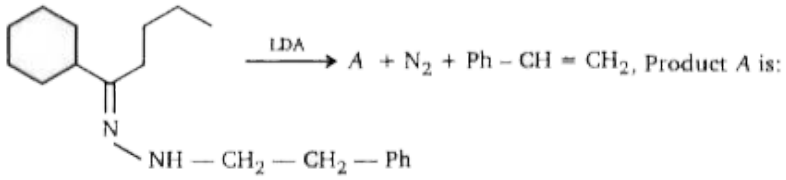
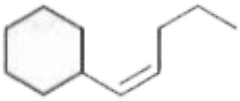
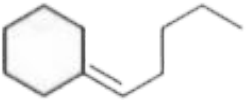
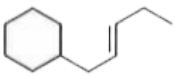
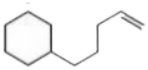
46. 

Product A is:

A. 

B. 

C. 

D. 

Answer: A

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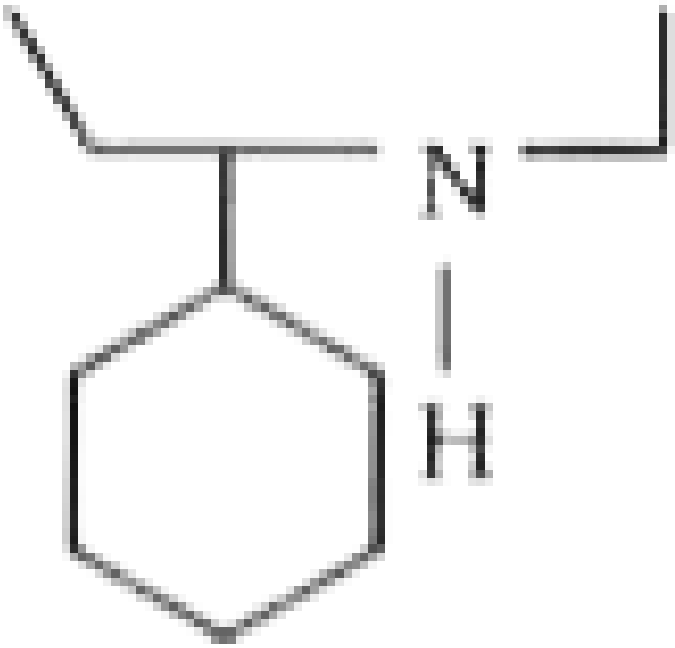

47.

LDA = Lithium di- isopropyl amide

A.

B.

C.

D. $H_2C = CH_2$

Answer: D

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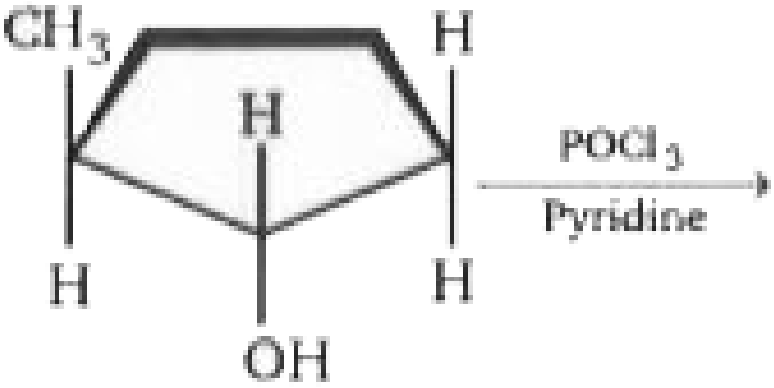
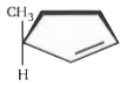
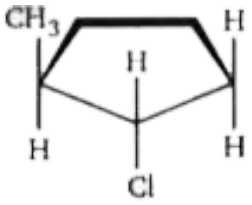


48. Major product of the reactiono is :

A. 

B. 

C. 

D. 

Answer: D

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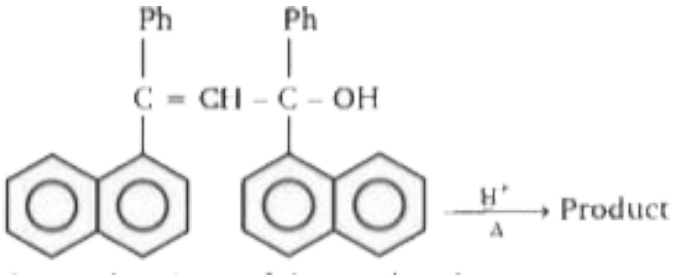
49. 

Stereochemistry of the product is :

A. Meso compound

B. Racemic mixture

C. Diastereomer

D. Optically pure enantiomers

Answer: B

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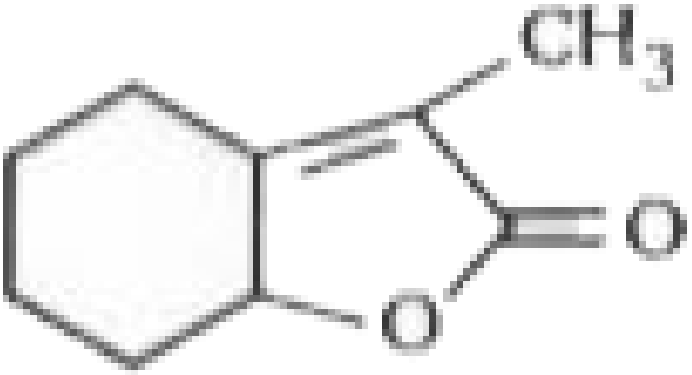
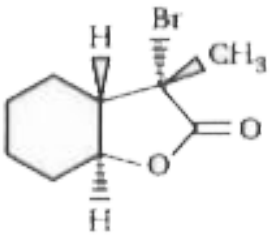


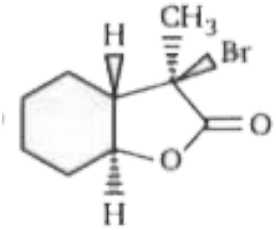
50.

Which ofthe following reactantis used to obtainabove compound (A). CAssume that ErO^- is used in all the reaction)

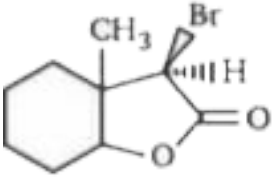
A.



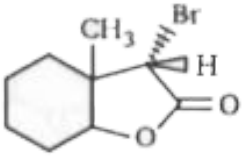
B.



C.



D.



Answer: A

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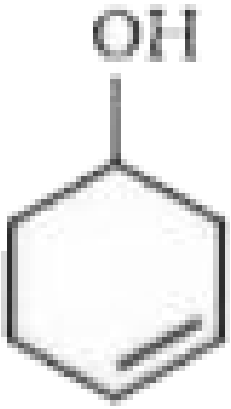
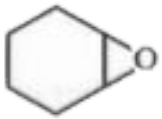
51. , Product A is:

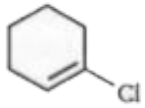


A.



B.

C.



D.

Answer: c

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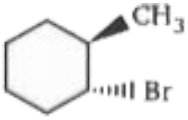
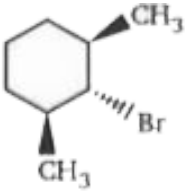
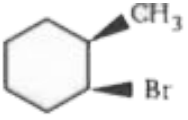
52. Rank the following in order ofdecreasing rate in an E_2 reaction :



(a)



(b)



(c)

A. $a > b > c$

B. $c > a > b$

C. $c > b > a$

D. $b > a > c$

Answer: B

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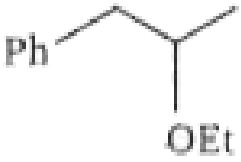
53. 

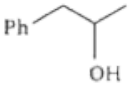
, Product

(A) is :

A. 

B. 

C. 



D.

Answer: B

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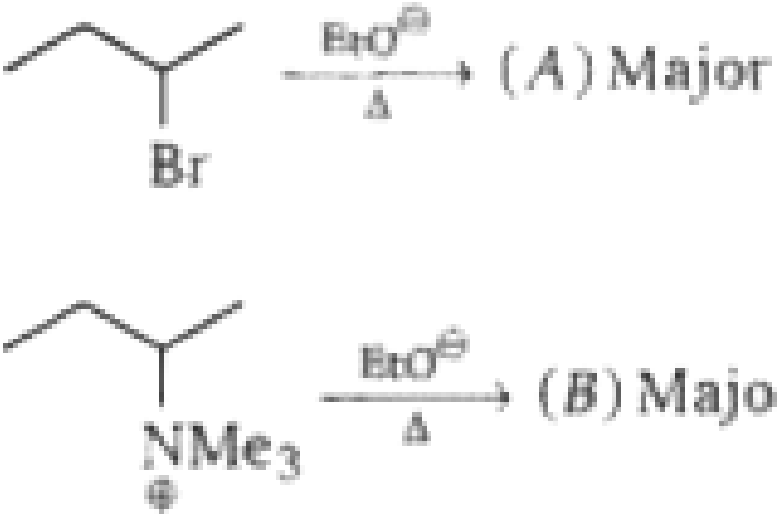
54.



Relation between (A) and (B) is :

A. G.I

B. Positional isomer

C. Enantiomer

D. Chain isomer

Answer: B

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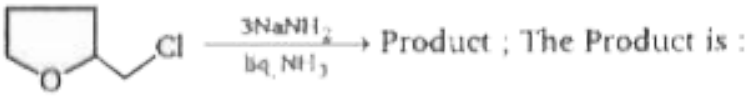
55. 

Product ,

The product is :

A. 

B. $HC = C - (CH_2)_3Ona$

C. $NaC = C - (CH_2)_3ONa$

D. $H - C = C - (CH_2)_3OH$

Answer: C

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56. Which best describes the product of the following reaction?

A. Absolute configuration has been inverted

B. Absolute configuration has been retained

C. Racemization (loss of absolute configuration) has occurred

D. Loss ofchirality has occurred Cthe product is achiral)

Answer: D

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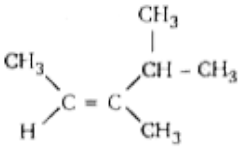
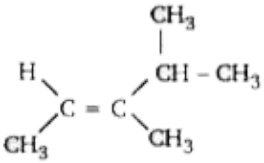
57. What is the major product of the following reaction?

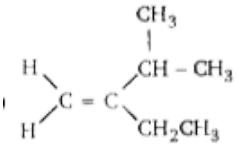
A.



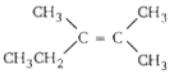
B.



C.



D.



Answer: D

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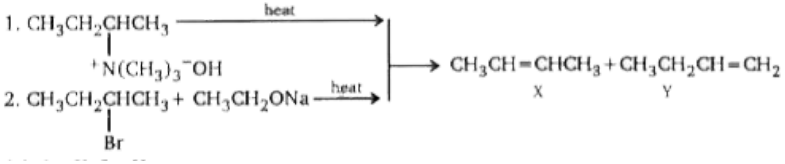
58. What will be the major product of each ofthe two reaction shown below?



A. 1-X,2-X

B. $1-Y, 2-X$

C. $1-X, 2-Y$

D. $1-Y, 2-Y$

Answer: B

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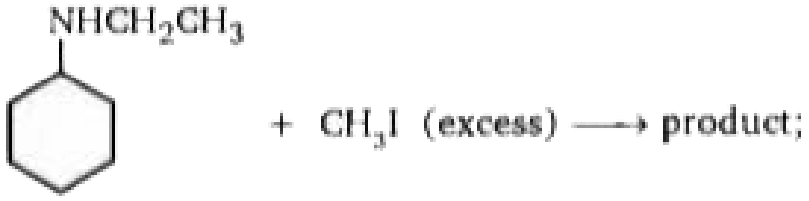
59. 

The product is :

A. a primary amine

B. a tertiary amine

C. a secondary amine

D. a quaternary ammonium salt

Answer: D

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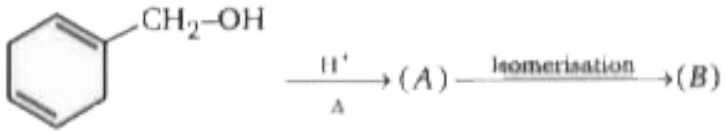
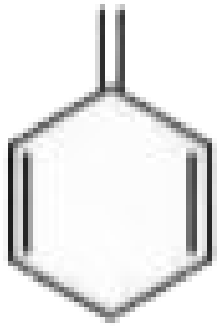
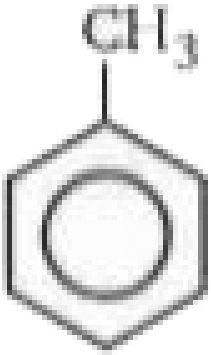
60. 

(A) on heating isomerizes to (B). What is the structure of (B) ?

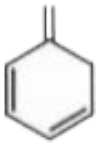
A.



B.



C.



D.

Answer: B

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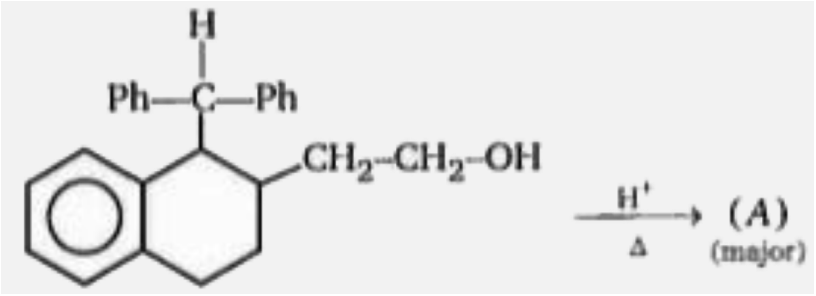
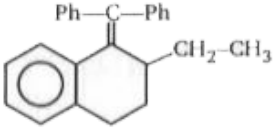
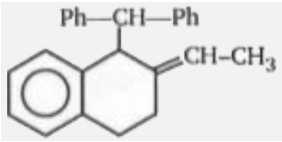
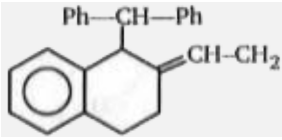
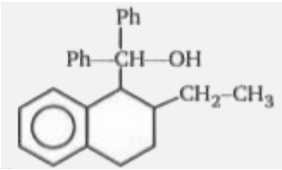
61. 

, major product (A) is :

A. 

B. 

C. 

D. 

Answer: A

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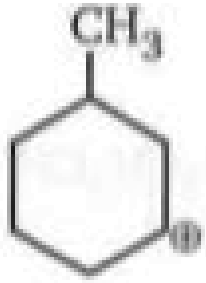
62. Which of the following carbocation will undergo rearrngement ?

A. 

B. 

C. $CH_3 - \underset{CH_3}{\overset{|}{C}}\ H - \overset{\oplus}{C} = O$

D. $CH_3 - NH - \overset{\oplus}{C}H - \underset{CH_3}{\overset{|}{C}}\ H - CH_3$

Answer: B

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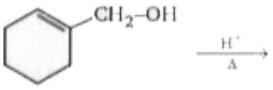
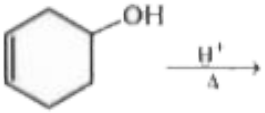
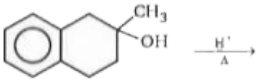
63. Which of the following compound is not resonance stabilized ?

A. 

B. 

C. 

D. All of these

Answer: D

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64. In which offollowing reaction rearrangement take place with change in carbon skeleton

A. $CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}} - \overset{\oplus}{C}H_2$

B. $CH_3 - CH_2CH_2^{\oplus}$

C. $CH_3 - \underset{\underset{CH_3}{|}}{C}\ H - CH_2 - \overset{\oplus}{C}H_2$

D. $CH_3 - CH^{\oplus} - CH_3$

Answer: A

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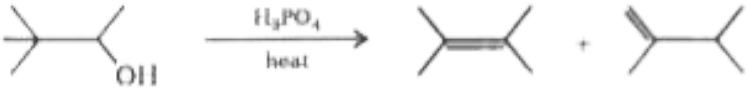
65. Consider the following reaction:



Which response contains all the correct statement about this process?

(1) Dehydration

(2) E_2 mechanism

(3) Carbon skeleton migration

(4) Most stable alkene will form

(5) Single -step reaction

A. 1,3

B. 1,2,3

C. 1,2,5

D. 1,3,4

Answer: D

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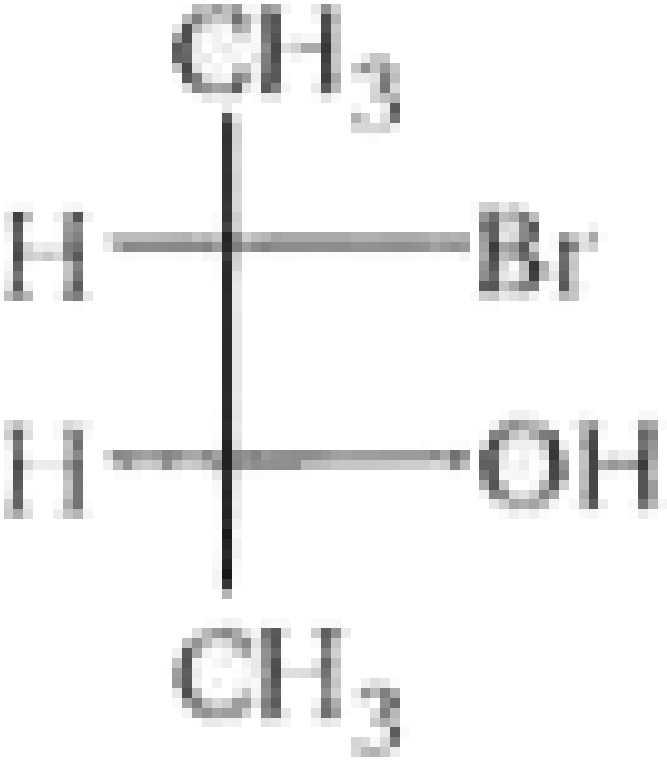

66.

$\xrightarrow{HBr}(X)\xrightarrow[\text{acetone}]{NaI}(Y)$(Major), Product (Y) is :

A. cis-2-butene

B. trans - 2- butene

C. 1-butene

D. Iso-butene

Answer: B

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67. $\overset{Br}{\underset{|}{CH_2}} - CH = CH - \overset{Br}{\underset{|}{CH_2}} \xrightarrow{Zn\,(dust)} (A)$

Above reaction is an example of 1,4-elimination. Predict the product.

A. $CH_3 - CH = C = CH_2$

B. $CH_3 - C = C - CH_3$

C. $CH_3 - CH_2 - C = CH$

D. $H_2C = CH - CH = CH_2$

Answer: D

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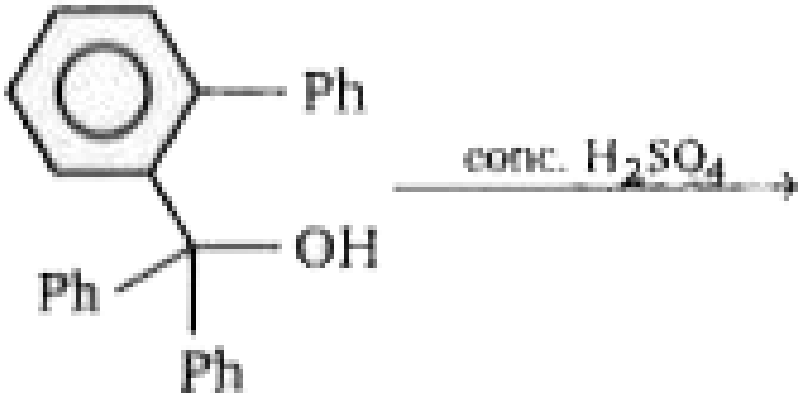
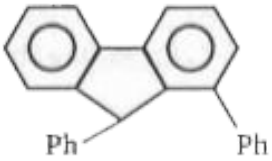
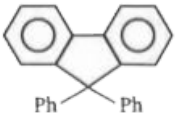
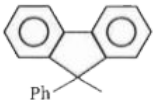


68.

Major product of the reaction is :

A. 

B. 

C. 

D. None of these

Answer: B

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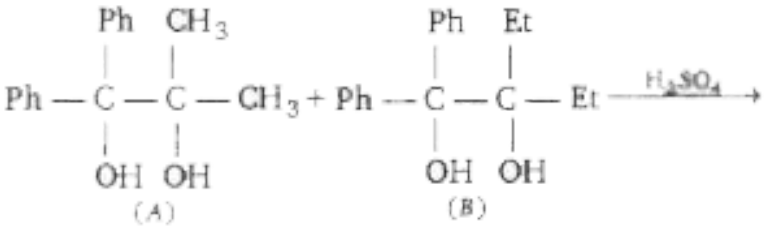

69.

When (A) and (B) rects with H_2SO_4 products obtained are

A. p,q,r,s

B. p,q

C. p,q,r

D. p,q,s

Answer: B

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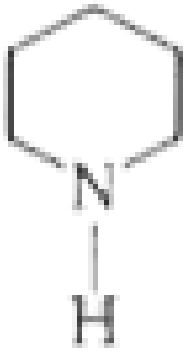
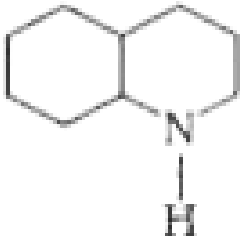
70. Which of the following compound gives even number of Hoffmann's exhaustive methylation

A. 

B. 

C. 

D. 

Answer: A::B

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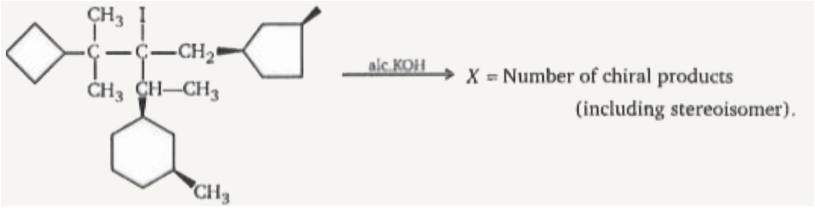
71. 

A. 2

B. 4

C. 6

D. 8

Answer: B

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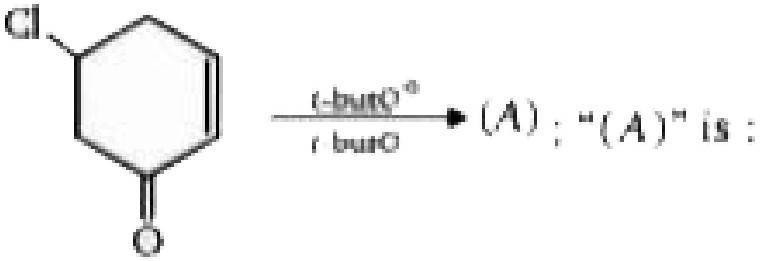
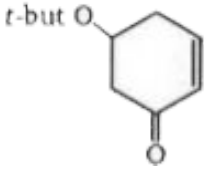
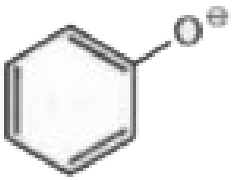
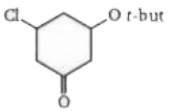


72.

A. 

B. 

C. 

D. 

Answer: B

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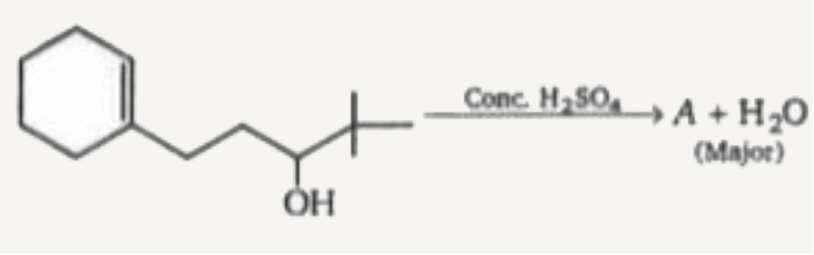
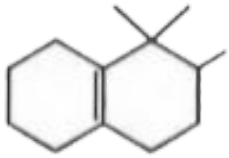
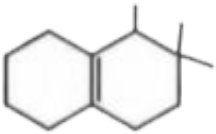
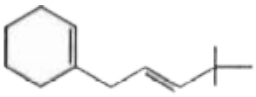
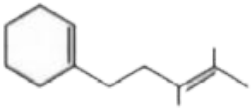
73. 

which ofthe following is product "A" in the above reaction?

A. 

B. 

C. 

D. 

Answer: A

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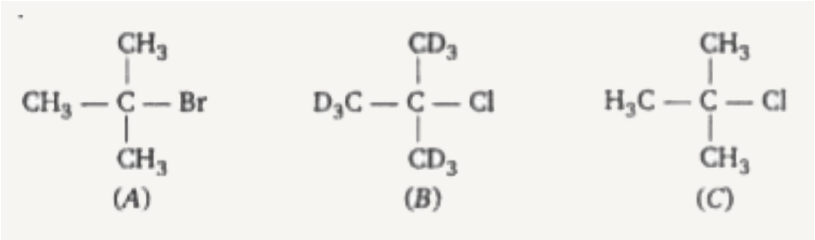
74. Which ofthe following is true regarding increasing reactivity in the E_2 reaction with $Na^+C_2H_5O^-$?



A. A is more reactive than B

B. B is more reactive thanA

C. A is more reactive than C

D. B is less reactive than C

Answer: A::C::D

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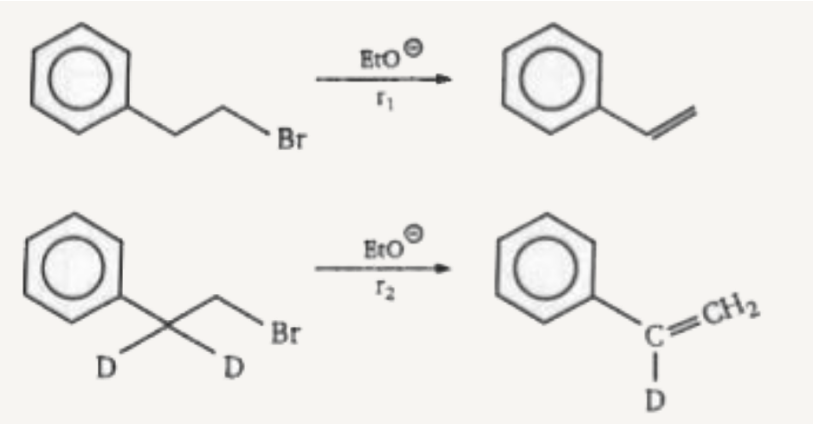
75. 

Compare of the Reaction .

A. $r_1 > r_2$

B. $r_1 = r_2$

C. $r_2 > r_1$

D. $r_1 = \frac{r_2}{2}$

Answer: A

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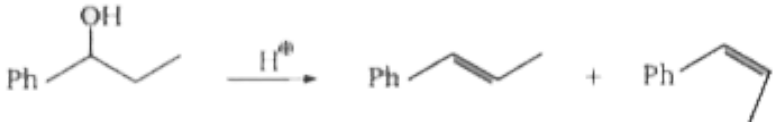
76. 

Which statement is not true for above reaction ?

A. It is dehydration reaction.

B. The mechanism followed by reaction is E_1

C. The reaction is stereo selective.

D. The major product is Z-alkene.

Answer: D

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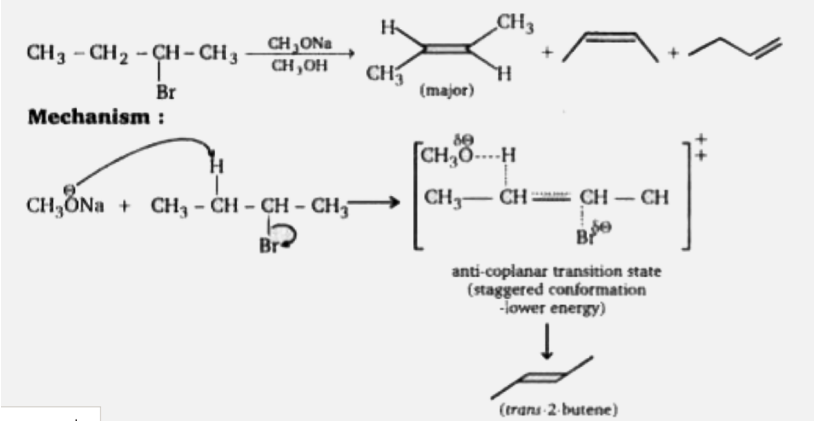
Level 2

1. Comprehension

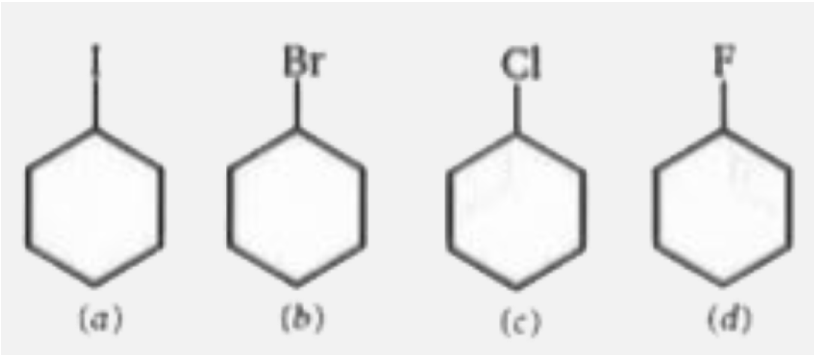
E_2 raction $\rightarrow$ Elimination bimolecular

In the general mechanism of the E_2 reaction a strong base abstract a

proton on a carbon atom adjacent to the one of the leaving group. As the abstracts a proton , a double bond forms and the leaving group leaves.



Identify the rate ofreaction of given compounds in E_2 reaction:



A. $a > b > c > d$

B. $a > c > b > d$

C. $b > a > c > d$

D. $b > d > a > c$

Answer:

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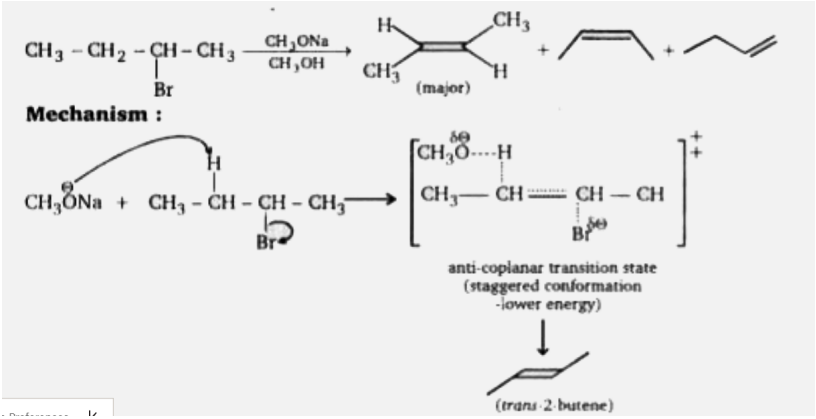
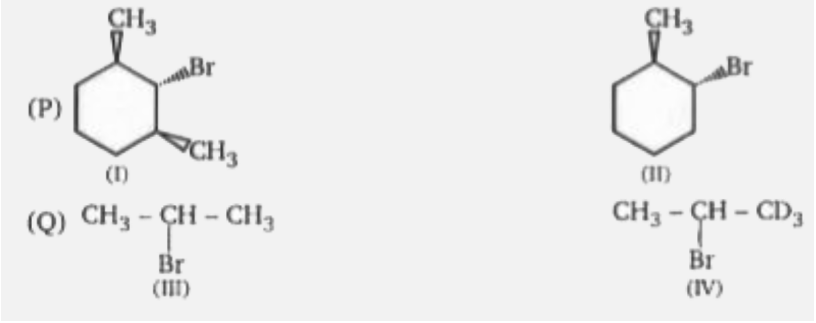
2. Comprehension

E_2 raction $\rightarrow$ Elimination bimolecular

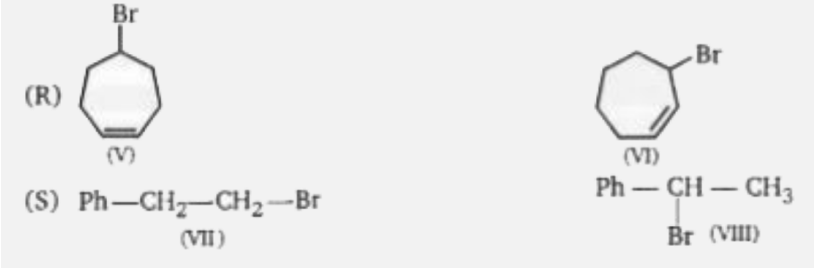
In the general mechanism of the E_2 reaction a strong base abstract a proton on a carbon atom adjacent to the one of the leaving group. As the abstracts a proton , a double bond forms and the leaving group leaves.



In given pairs, which compound is more reactive toward E_2 reaction



$(Q) CH_3 - \underset{\underset{Br}{|}}{C}\ H - CH_3$ (III) $\quad CH_3 - \underset{\underset{Br}{|}}{C}\ H - CD_3$ (IV)



(S) $Ph - CH_3 - CH_2Br$ $\quad Ph - \underset{\underset{BrVIII}{|}}{C}\ H - CH_3$

A. P-II,Q-III,R-VI,S-VII

B. P-II,Q-III,R-VI,S-VI

C. P-I,Q-III,R-VI,S-VII

D. P-I,Q-II,R-V,S-VIII

Answer:

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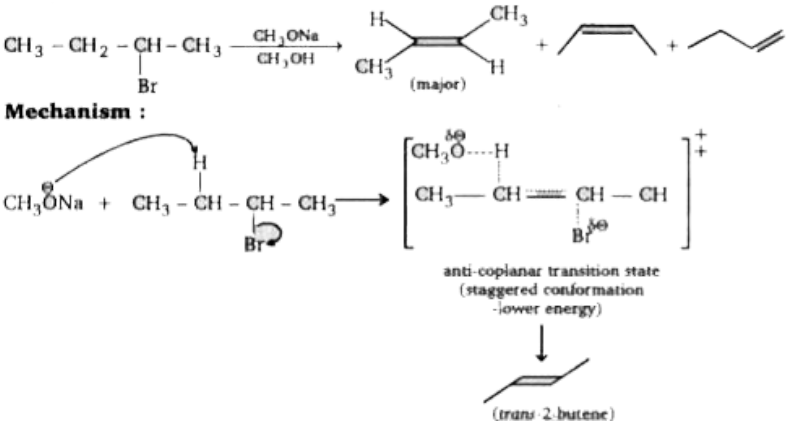
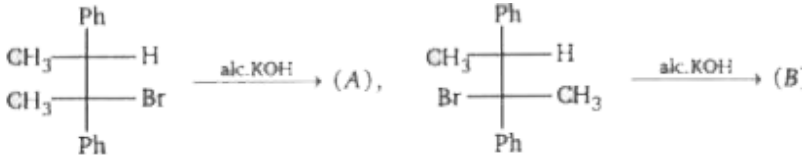
3. Comprehension

E_2 raction $\rightarrow$ Elimination bimolecular

In the general mechanism of the E_2 reaction a strong base abstract a proton on a carbon atom adjacent to the one of the leaving group. As the abstracts a proton , a double bond forms and the leaving group leaves.





Product (A) and (B) are :

A. A = cis, B = cis

B. A = trans, B= cis

C. A= trans, B = trans

D. A = cis, B= trans

Answer:

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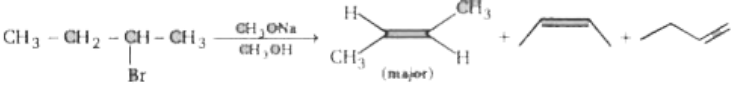
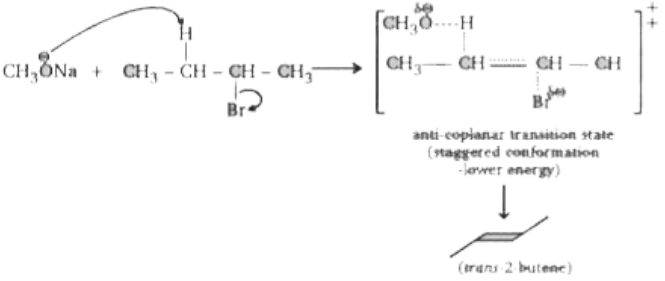
4. Comprehension

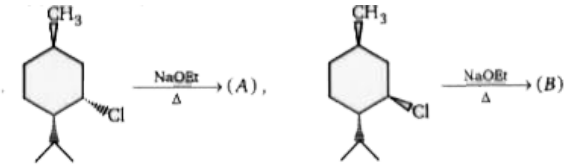
E_2 raction $\rightarrow$ Elimination bimolecular

In the general mechanism of the E_2 reaction a strong base abstract a proton on a carbon atom adjacent to the one of the leaving group. As the abstracts a proton , a double bond forms and the leaving group leaves.

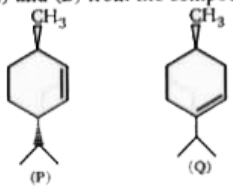


Mechanism :





Select the products (A) and (B) from the compounds (P) and (Q) given below:



A. A = P,B=P

B. A=Q,B= Q

C. A = Q,B= P

D. A=Q,B=P

Answer:

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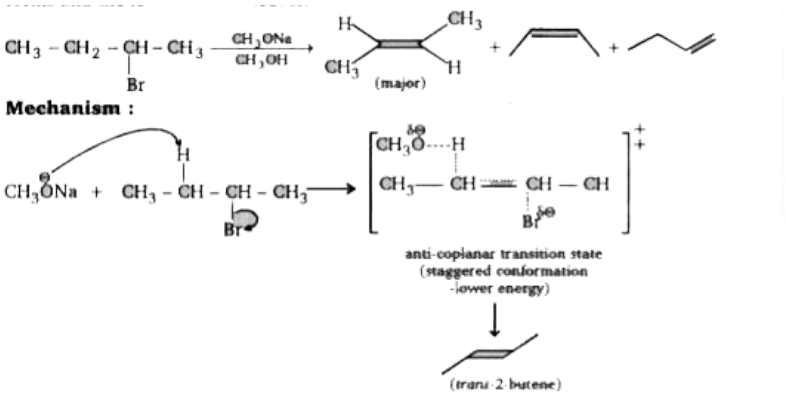
5. Comprehension

E_2 raction $\rightarrow$ Elimination bimolecular

In the general mechanism of the E_2 reaction a strong base abstract a proton on a carbon atom adjacent to the one of the leaving group. As the abstracts a proton , a double bond forms and the leaving group leaves.



Which of the following compound is inert toward E_2 reaction.

A. $CH_3 - \underset{\underset{Br}{|}}{CH} - CH_2 - CH_3$

B.

C. $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2 - Br$

D. $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - \underset{\underset{Br}{|}}{CH} - CH_3$

Answer:

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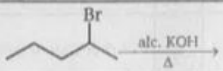
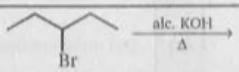
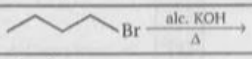
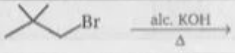
6. Match the column :

Column (I) E_2 reaction (elimination bimolecular)		Column (II) No. of possible products. (including stereoisomerism)	
(a)		(p)	0
(b)		(q)	1
(c)		(r)	2
(d)		(s)	3

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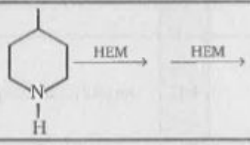
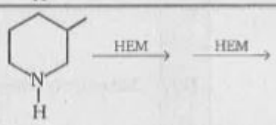
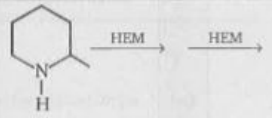
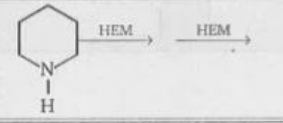
7. Match the column :

Column (I) Reaction		Column (II) Product	
(a)		(p)	$H_2C=CH-CH_2-CH=CH_2$
(b)		(q)	$H_2C=CH-CH_2-CH_2-CH=CH_2$
(c)		(r)	$H_2C=CH-CH_2-\underset{\displaystyle CH_3}{\overset{\displaystyle \vert}{C}}=CH_2$
(d)		(s)	$H_2C=CH-\underset{\displaystyle CH_3}{\overset{\displaystyle \vert}{CH}}-CH=CH_2$

HEM = Hoffmann exhaustive methylation followed by elimination .

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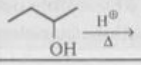
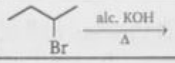
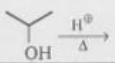
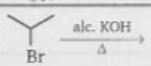
8. Match the column :

Column (I)		Column (II)	
(a)		(p)	Product are Diastereomers
(b)		(q)	Carbocation is intermediate
(c)		(r)	2nd order reaction
(d)		(s)	Ist order reaction

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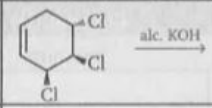
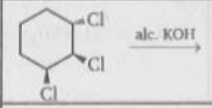
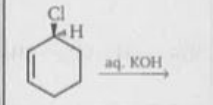
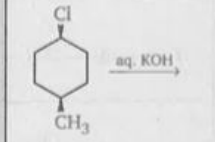
9. Match the column :

	Column (I)		Column (II)
(a)		(p)	Optically active product
(b)		(q)	Optically inactive product
(c)		(r)	2nd order reaction
(d)		(s)	unimolecular reaction

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10. Match the column :

Column (I)		Column (II)	
E_2 reactions (elimination bimolecular)		Number of products (including stereoisomerism)	
(a)	$CH_3-CH_2-CH_2-CH_2-Br \xrightarrow{\text{alc. KOH}}$	(p)	1
(b)	$CH_3-\underset{\underset{Br}{|}}{CH}-CH_2-CH_3 \xrightarrow{\text{alc. KOH}}$	(q)	2
(c)	$CH_3-\underset{\underset{Br}{|}}{\overset{\overset{CH_3}{|}}{C}}-CH_2-CH_3 \xrightarrow{\text{alc. KOH}}$	(r)	3
(d)	$Ph-CH_2-\underset{\underset{Br}{|}}{CH}-CH_2-CH_3$	(s)	4

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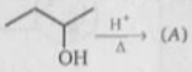
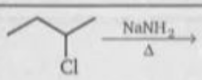
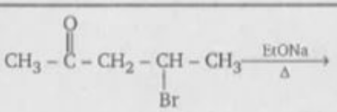
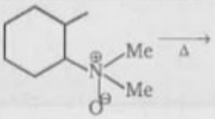
11. Match the column :

Column (I)		Column (II)	
(a)		(p)	E_1
(b)		(q)	E_2
(c)		(r)	Ei (elimination intramolecular)
(d)		(s)	E_{1CB}

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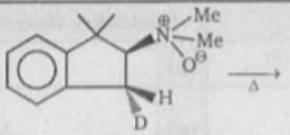
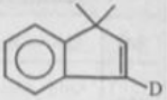
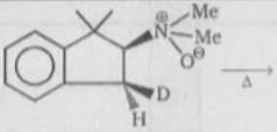
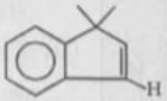
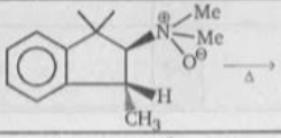
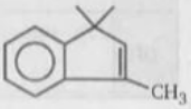
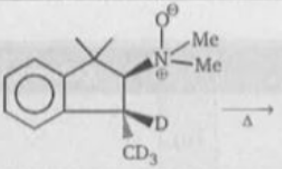
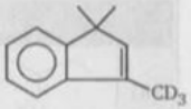
12. Match the column :

Column (I) Reaction		Column (II) Product	
(a)		(p)	
(b)		(q)	
(c)		(r)	
(d)		(s)	

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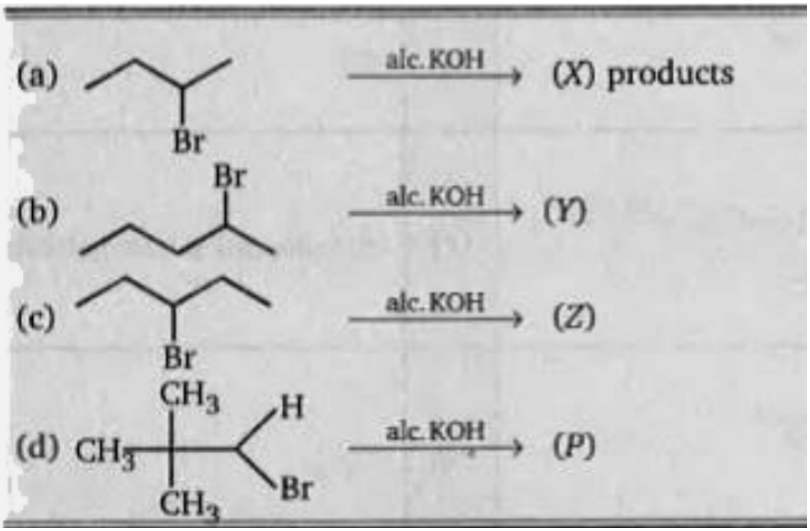
13. 

Sum of X + Y + Z + P =

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14.

(Unitcell)	(no of atoms per unitcell)
A) Simple cube	1) 4
B) fcc	2) 2
C) bcc	3) 1

The correct match is

	A	B	C
1)	2	3	1
3)	3	1	2

	A	B	C
2)	2	1	3
4)	1	2	3

The correct match is

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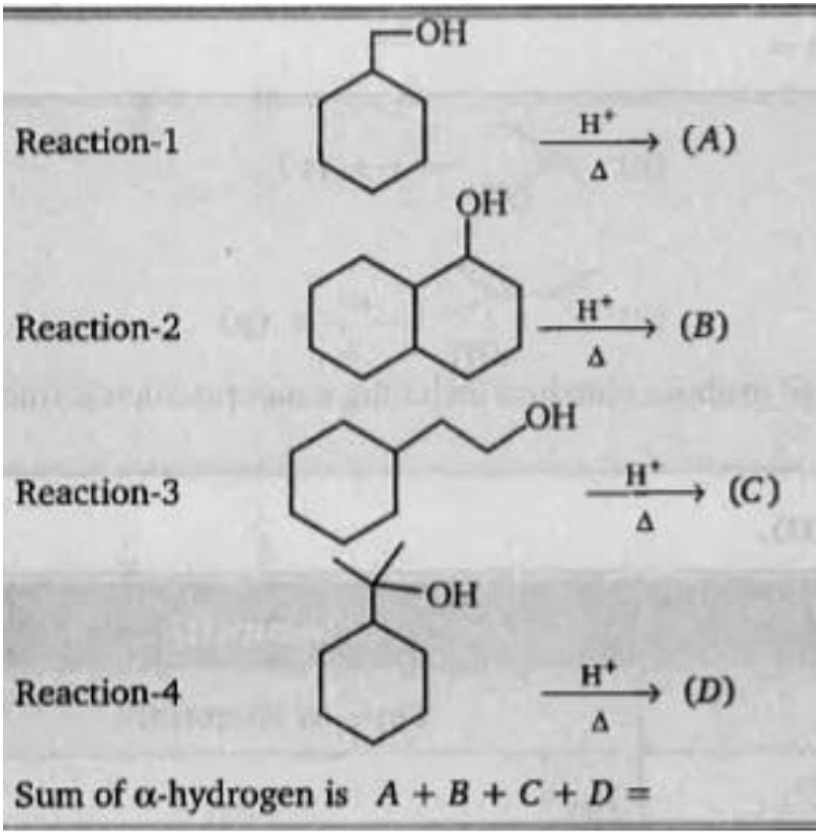
15. 

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16.

Sum of α hydrogen is (A + B + C =)

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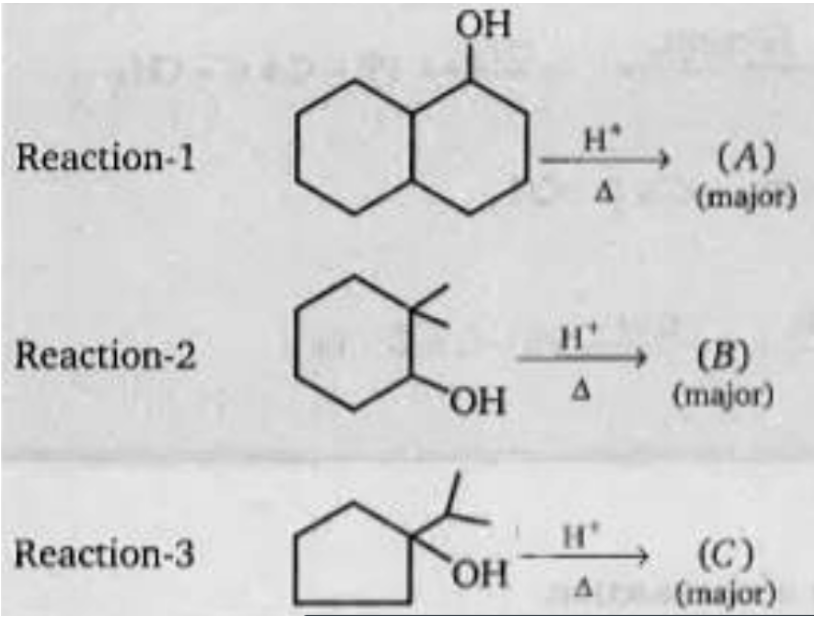
17. 

Sum of α -hydrogen (A + B +C)=

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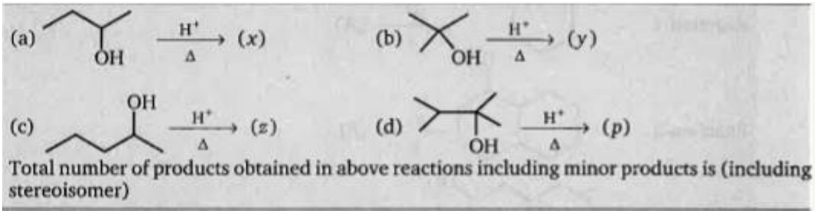
18. Complete the following reaction



Total number of products obtained in above reactions including minor products is (including stereoisomer)

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19. Match the column (I) and (II)

Column (I)		Column (II)	
Reaction		**Type of Reaction**	
(a)	R -2 -chlorobutane $\xrightarrow[\text{acetone}]{KSH}$	**(p)**	S_{N^1}
(b)	R - 2- chlorobutane $\xrightarrow[EtOH]{EtO^- \overset{\oplus}{Na}}$	**(q)**	S_{N^2}
(c)	2 - bromo- 2- methyl propane $\xrightarrow{H_2O}$	**(r)**	E_1
(d)	2- butanol $\xrightarrow[\Delta]{H_2SO_4}$	**(s)**	E_2

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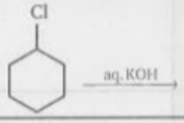
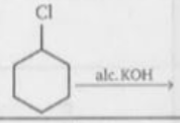
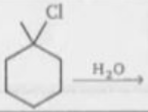
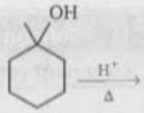
20. Match the column (I) and (II)

Column (I)		Column (II)	
	Reaction		Type of Reaction
(a)		(p)	S_N1
(b)		(q)	S_N2
(c)		(r)	E_1
(d)		(s)	E_2

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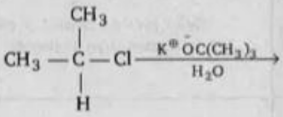
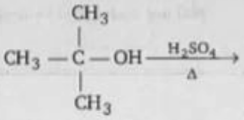
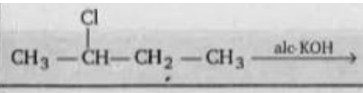
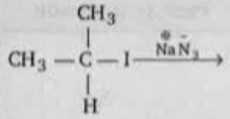
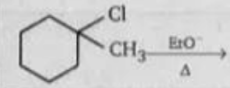
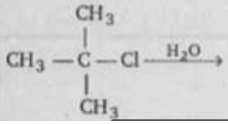
21. Select whether the following reaent combination will result in elimination of substitution reactions leading of the major product.

	Reaction	Substitution	Elimination
(a)			
(b)			
(c)			
(d)			
(e)			
(f)			

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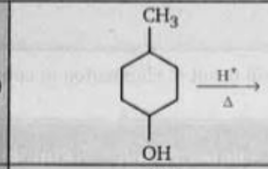
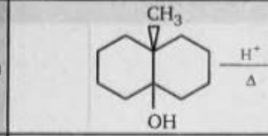
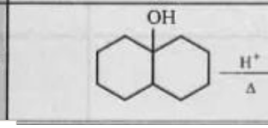
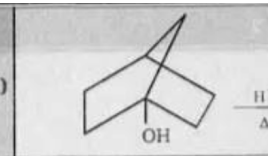
22. Match the column (I) and (II)

Column (I)		Column (II)	
Reaction		Comment on product	
(a)		(p)	Racemic mixture
(b)		(q)	Major product consist of even number of α-hydrogen
(c)		(r)	Will not undergo dehydration
(d)		(s)	Major product consist of odd number of α-hydrogen

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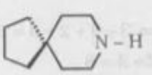
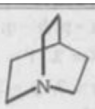
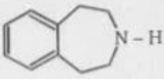
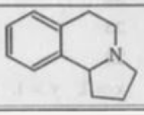
23. For each of the following amines (A through D), exhaustive methylation (treatment with excess methyl iodide), followed by Hoffmann elimination (heating with AgOH), repeated as necessaJy, removes the nitrogen atom in the form oftrimethylamine. Indicate the numberof repetitive Hoffmann eliminations required to remove the nitrogen by a

number (1 to 4) in the designated answer sheet.

A.		B.		C.	
D.		E.		F.	
a.		b.		c.	
d.		e.		f.	

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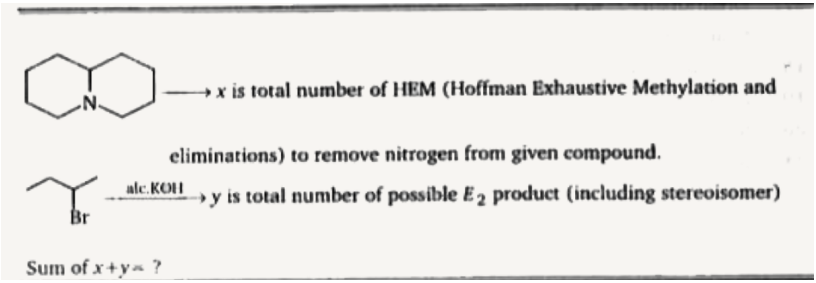
24. Complete the following reaction



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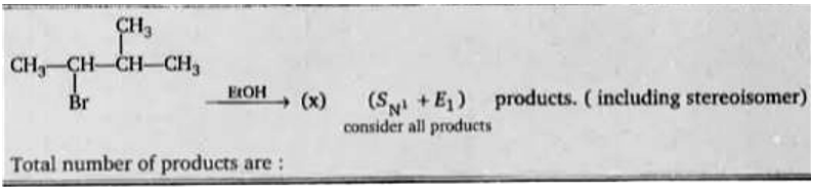
25. Complete the following reaction



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