

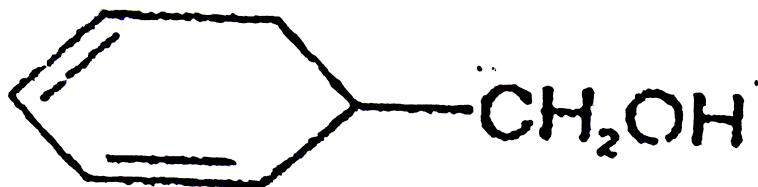


CHEMISTRY

PHYSICAL, INORGANIC, AND ORGANIC CHEMISTRY

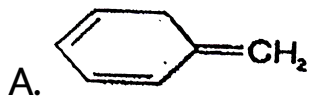
ALKYL HALIDE, ALCOHOL, PHENOL, ETHER

ORGANIC CHEMISTRY(Alkyl Halide, Alcohol, Phenol, Ether)



dehydration with conc. H_2SO_4 predominantly forms

:



Answer: 2

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2. A dextro- rotatory optically active alkyl halide undergoes hydrolysis by S_N2 mechanism. The resulting alcohol is :

A. Dextrorotatory

B. Laevorotatory

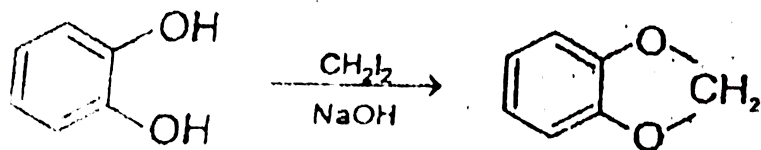
C. Optically inactive due to racemization

D. May be dexture or laevorotatory

Answer: 2

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3. The reaction,



is an example of ,

A. Wurtz reaction

B. Wittig reaction

C. Ullmann reaction

D. Williamson reaction

Answer: 3



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4. Neopentyl bromide undergoes dehydrohalogenation to give alkene even though it has no β - hydrogen. This is due to :

A. *E*2 mechanism

B. by direct dehydrohalogenation

C. rearrangement of carbocation by $E1$
mechanism

D. $E1cB$ mechanism

Answer: 3



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5. From Williamson's synthesis preparation of which of the following is possible ?

A. Only symmetrical ethers

B. Only asymmetrical ethers

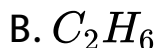
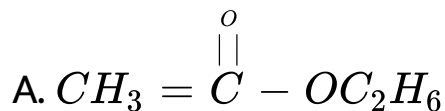
C. Both (1) and (2)

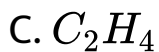
D. None of these

Answer: 3

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6. Ethyl alcohol is heated with conc. H_2SO_4 . The product formed is :

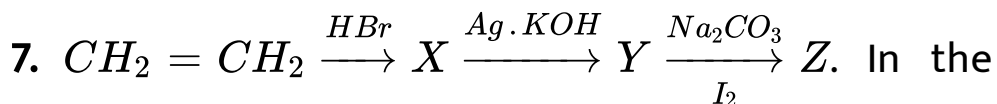




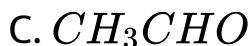
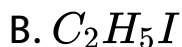
Answer: 3



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above reaction sequence, Z is :



D. CHI_3

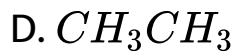
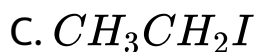
Answer: D

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8. Methyl alcohol when reacted with carbon monoxide using cobalt or rhodium as catalyst, compound, 'A' is formed. On heating 'A' with HI in the presence of red phosphorus as catalyst 'B' is formed. Identify 'B'.

A. CH_3COOH

B. CH_3CHO



Answer: D



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9. Which of the following is added to chloroform to slow down its aerial oxidation in presence of light ?

A. Carbonyl chloride

B. Ethyl alcohol

C. Sodium hydroxide

D. Nitric acid

Answer: B



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10. The catalyst used in the preparation of an alkyl chloride by the action of dry HCl on an alcohol is

A. Anhydrous $AlCl_3$

B. $FeCl_3$

C. Anhydrous $ZnCl_2$

D. Cu

Answer: 3



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11. Which of the following does not give a precipitate with alcoholic $AgNO_3$?

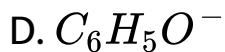
- A. Benzyl chloride
- B. Chlorobenzene
- C. Allyl chloride
- D. *t* – butyl chloride.

Answer: 2



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12. Which of the following is the strongest nucleophile ?



Answer: 3

13. 1 – Phenyl ethanol can be prepared by the reaction of C_6H_5CHO with :

A. CH_3MgI , ether followed by hydrolysis

B. $C_2H_5Br + H_2O$

C. $CH_3CH_2Br + Alc.KOH$

D. $CH_2Br + Al_4C_3$

Answer: A



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14. When alkyl halide is heated with dry Ag_2O . It produces :

A. Ester

B. Ether

C. Ketone

D. Alcohol

Answer: 2



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15. When ethyl alcohol is oxidised with PCC, it gives :

A. CH_3COOH

B. $CH_3CH_2 - O - CH_2CH_3$

C. CH_3CHO

D. CH_3COCH_3

Answer: 3



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16. *p* – nitrophenol and *o* – nitrophenol are separated by

A. Crystallization

B. Fractional crystallization

C. Distillation

D. Steam distillation

Answer: D



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17. Phosgene is a poisonous gas obtained in chloroform bottles, substance used to make it non-poisonous is :

A. Formic acis

B. Ethanol

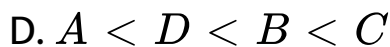
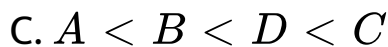
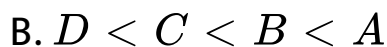
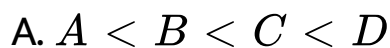
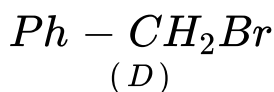
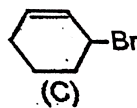
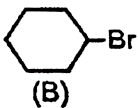
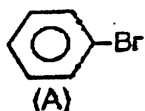
C. Dichloro methane

D. CH_3COOH

Answer: 2

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18. Order of hydrolysis of the following in increasing order is :



Answer: A



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19. $CHCl_3 + OH^- \rightarrow HCOO^-$, intermediate of this reaction can be



C. Both (1) and (2)

D. can not be predicted

Answer: C



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20. Ethers can not be prepared by :

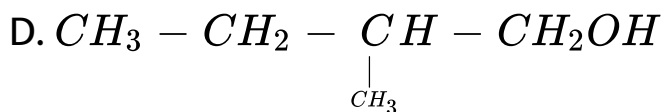
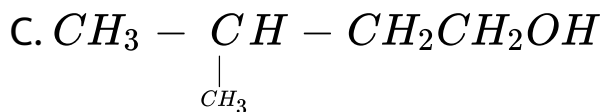
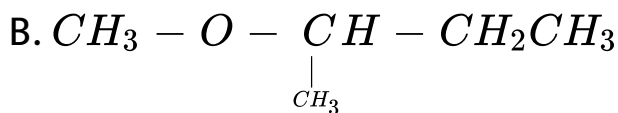
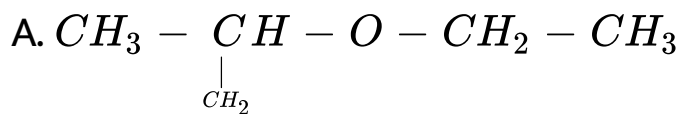
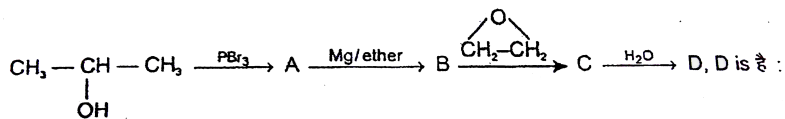
- A. Heating alkyl halide with dry silver oxide
- B. Heating alkyl halide with ammonical KOH
- C. Heating alkyl halide with potassium alkoxide
- D. Heating an excess of alcohol with alumina
under pressure

Answer: 2



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21. Complete the following reaction

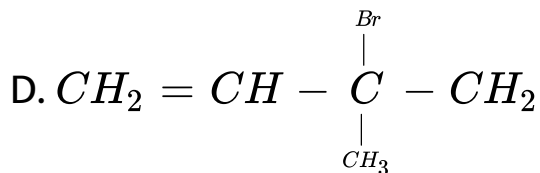
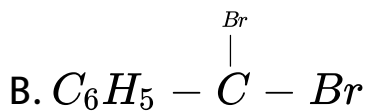
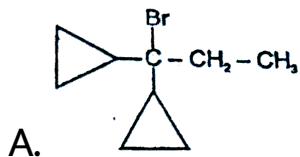


Answer: 3



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22. Which of the following will be most reactive for E_1 reaction ? .



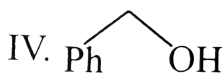
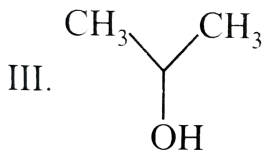
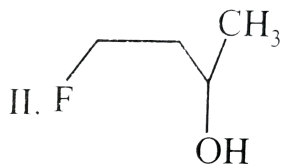
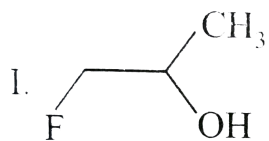
Answer: 1



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23. The order of reactivity of the following alcohols

towards conc. HCl is



I.

II.

III. IV.

A. $I > II > III > IV$

B. $I > III > II > IV$

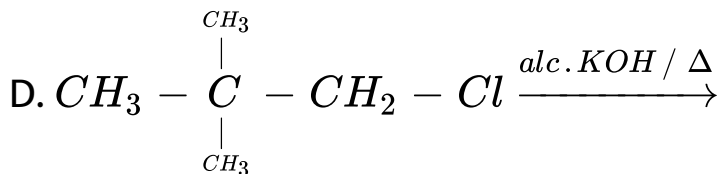
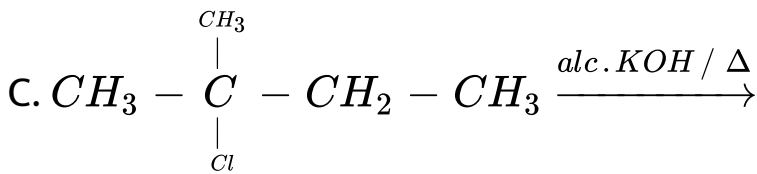
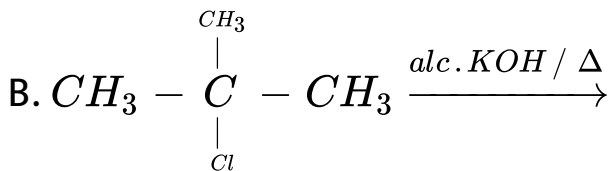
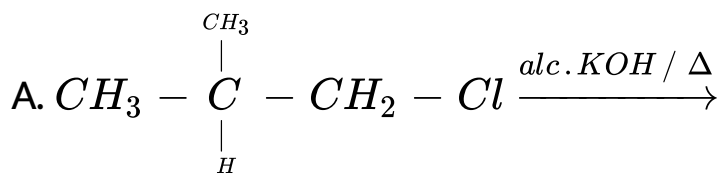
C. $IV > III > II > I$

D. $IV > III > II > I$

Answer: 3



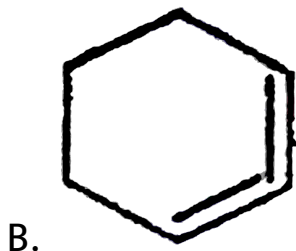
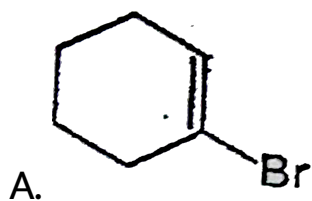
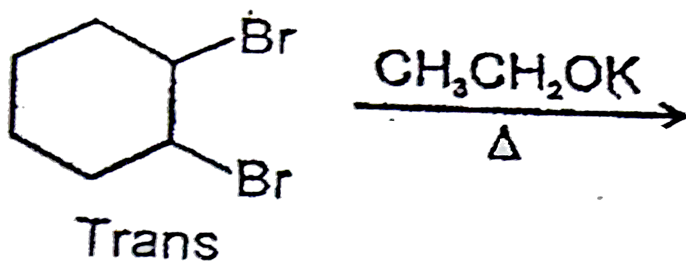
24. In which of the following reaction, regioselectivity can be observed ?

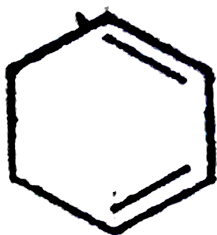


Answer: 3

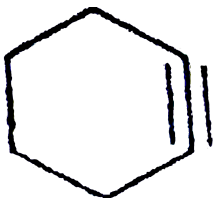


25. The most probable product in the following reaction is :





C.

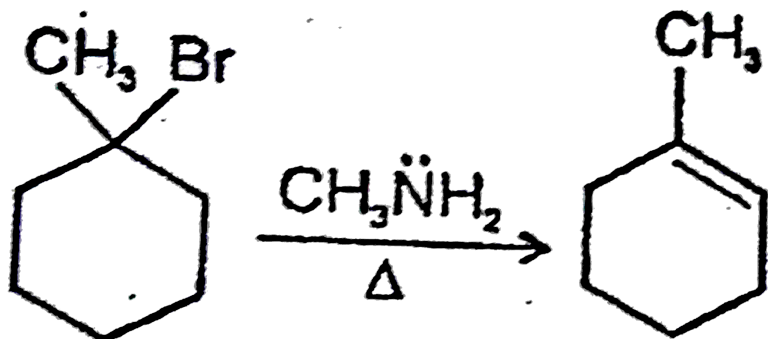


D.

Answer: C

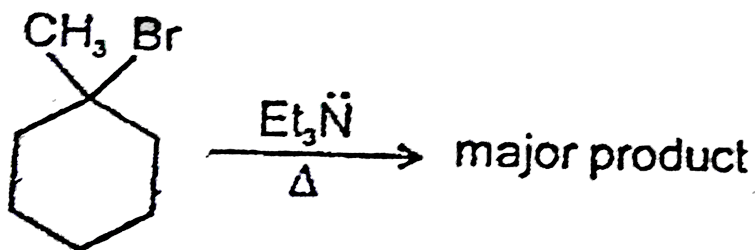


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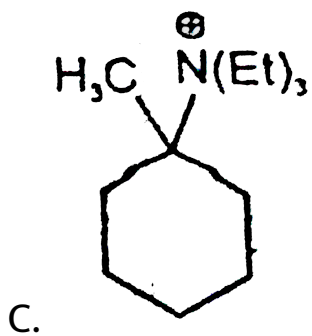
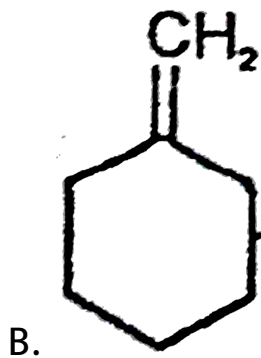
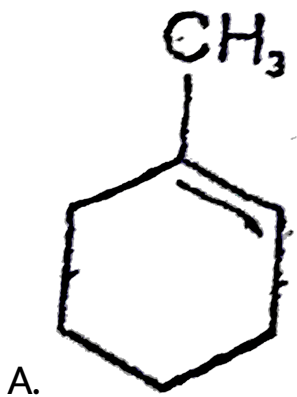
26. If

Then what will be the major product of the following reaction



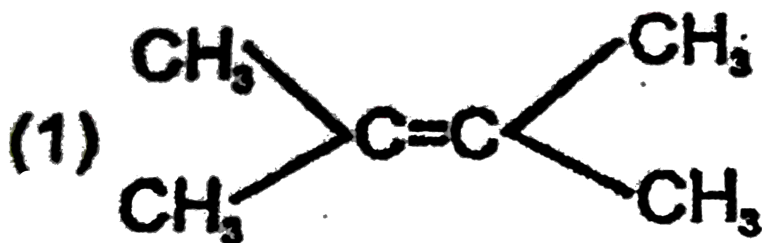
major

product



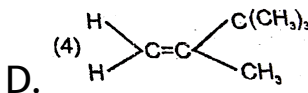
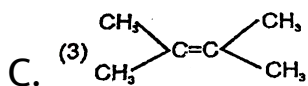
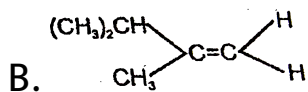
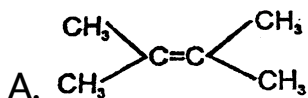
D. 2 & 3 both

Answer: 2



27.

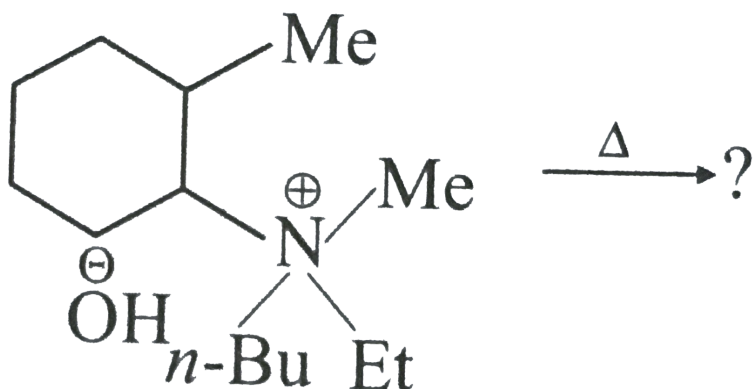
X and Y are respectively :



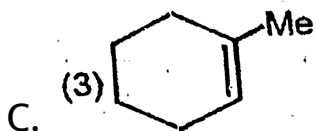
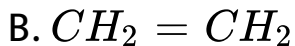
Answer: 1

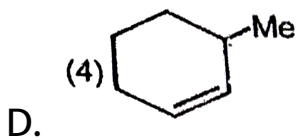


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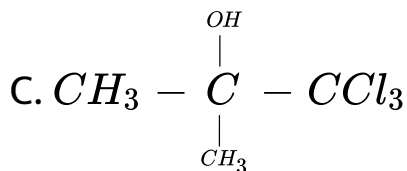
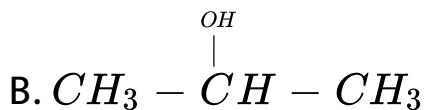
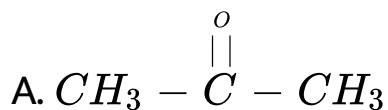
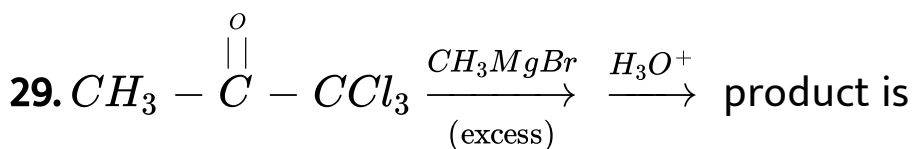
The alkene formed as a major product in the above elimination reaction is:

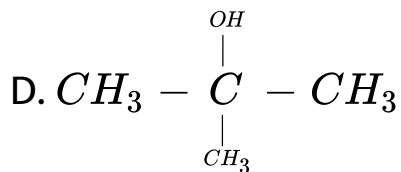




Answer: 2

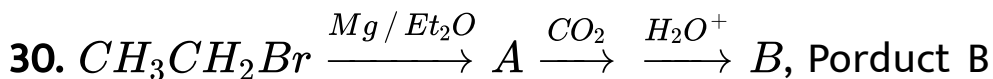
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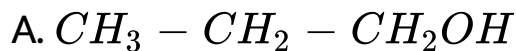


Answer: 4

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is



Answer: C



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31. When $PhMgBr$ reacts with t – Butanol, the product would not be

A. Benzene

B. $(CH_3)_3COMgBr$

C. $(CH_3)_3C - Br$

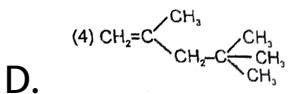
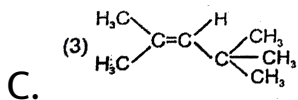
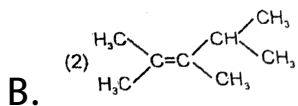
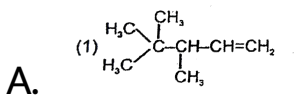
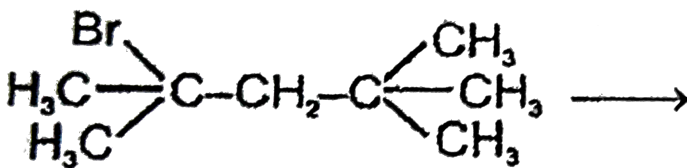
D. All are incorrect.

Answer: C



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32. Which is the product of the following elimination reaction ?



Answer: 4



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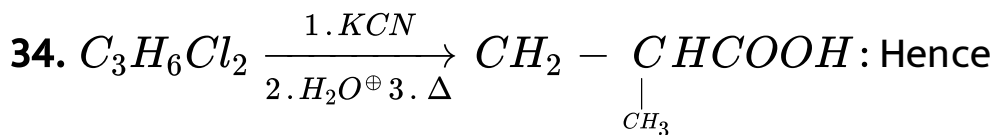
33. Chloropicrin is obtained when chloroform reacts with and reaction is

- A. Nitric acid
- B. Picric acid
- C. Nitrous acid
- D. Acetic acid

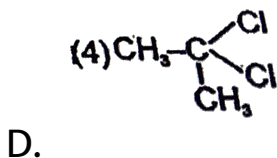
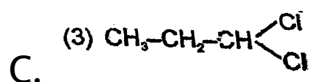
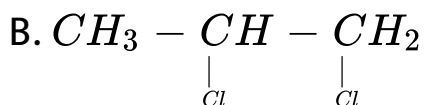
Answer: 1



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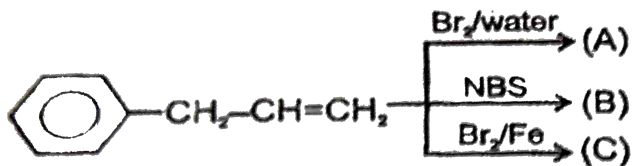
reactant is :



Answer: 4

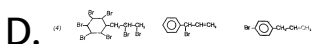
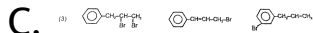


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35.

(A), (B) and (C) respectively are



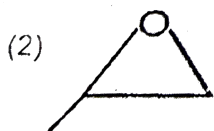
Answer: 1



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36. Which statement is incorrect.

A. Phenols decolourise Br_2 water due to electrophilic substitution.



B. is attacked at less sterically hindered carbon by nucleophile in basic medium.

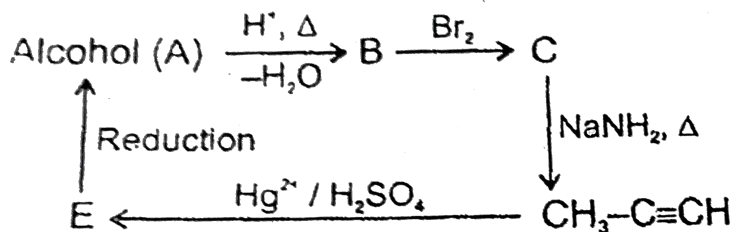
C. Tertiary butyl bromine is more reactive towards hindered both E1 and E2 elimination among its isomers

D. More is Number of $\beta - H$, more is the ease of E2 reaction.

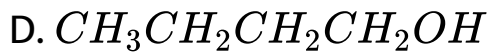
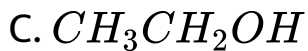
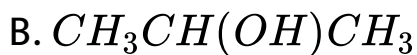
Answer: 4

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37. Observe the following sequence of reaction and find the structure of A.

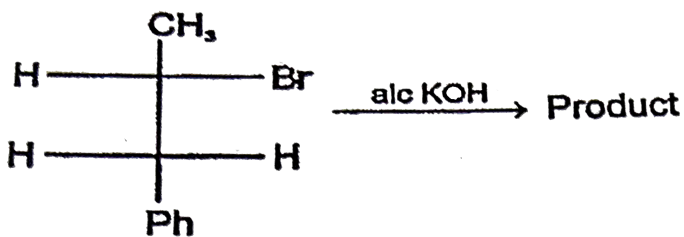


A. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$



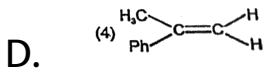
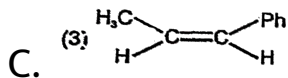
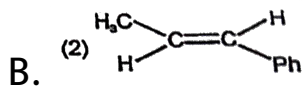
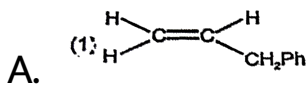
Answer: 2

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Product

Main product in above reaction is :

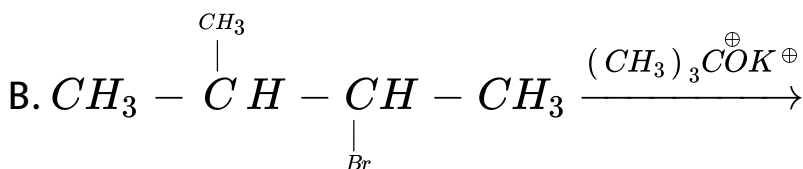
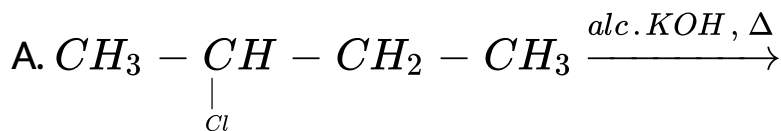


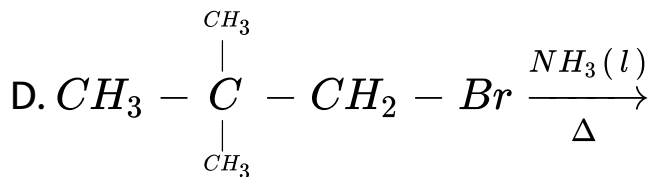
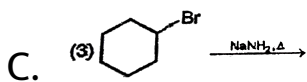
Answer: B



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39. Which one of the following is not E2 reaction ?

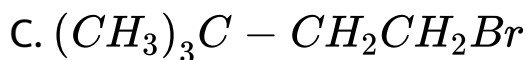
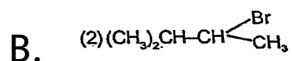
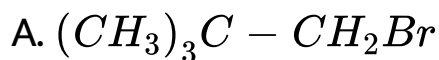


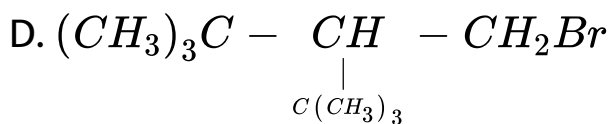


Answer: 4

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40. Most reactive alkyl halide towards $E2$ mechanism is :

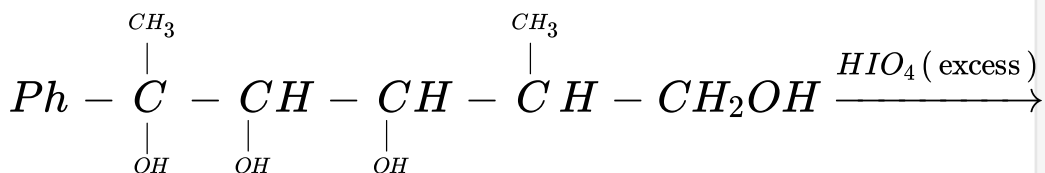




Answer: 2

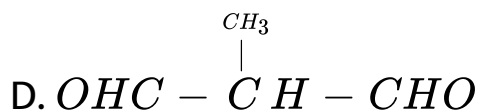
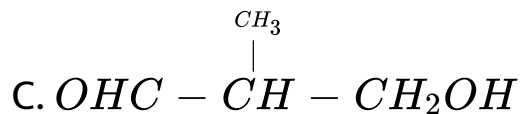
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41. The product which is not formed in the following reaction :



A. $HCOOH$

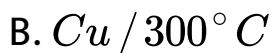
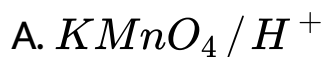
B. $Ph - \underset{\substack{|| \\ O}}{C} - CH_3$



Answer: 4

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42. Which of the following reagent is correct for preparation of but-2-enoic acid from but-2-en-1-ol?



C. Pyridinium chloro chromate (*PCC*)

D. (i) MnO_2 . (ii) Ammonical $AgNO_3$, (iii) H^+

Answer: 4

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43. An SN^2 reaction of an asymmetric carbon of a compound always gives :

A. an enantiomer of the substrate

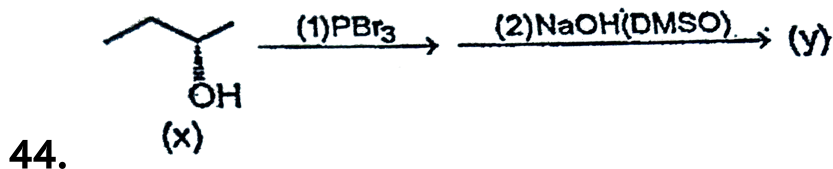
B. a product with opposite rotation

C. a mixture of diastereomers

D. A single stereoisomer

Answer: 4

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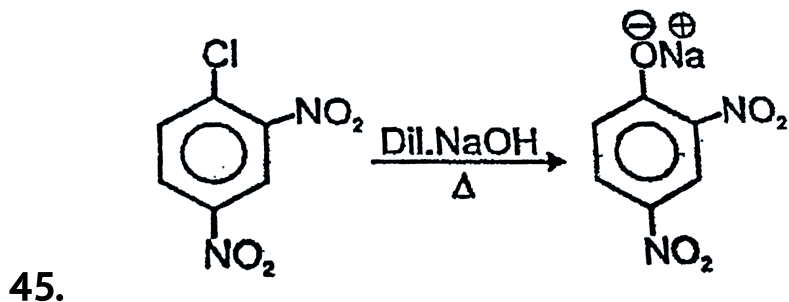
(*x*) and (*y*) are :

- A. Structural isomers
- B. Enantiomers
- C. Different compounds

D. Identical compounds

Answer: 4

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The above transformation proceeds through

- A. Electrophilic - addition
- B. Benzyne intermediate

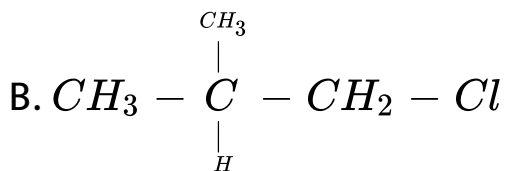
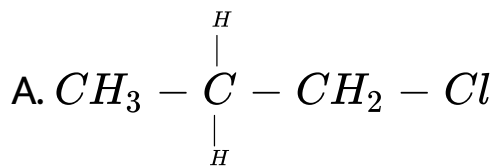
C. Nucleophilic substitution

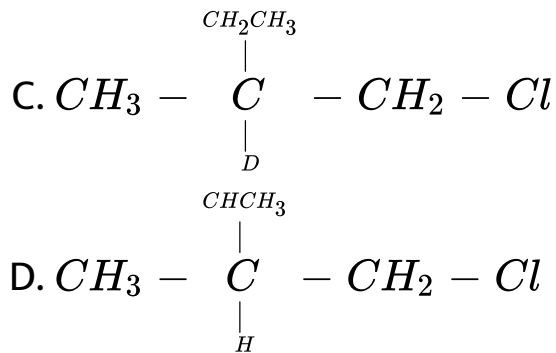
D. Electrophilic substitution

Answer: 3

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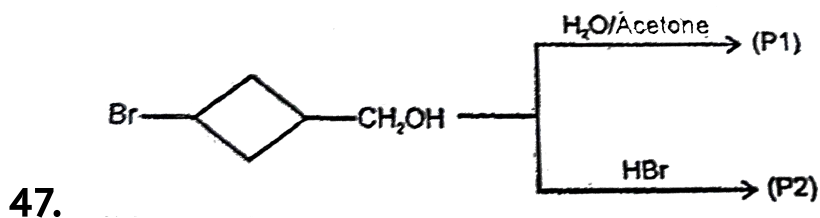
46. Racemic mixture is obtain in which substrate when it is treated with CH_3OH



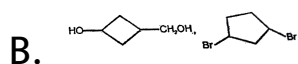
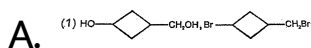


Answer: 3

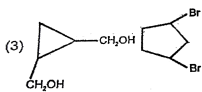
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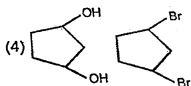
P1 and P2 are respectively :



C.



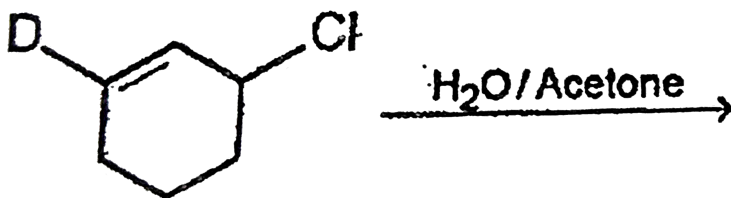
D.



Answer: C



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Possible number of products and fractions on fractional distillation are respectively:

A. 2, 1

B. 4,2

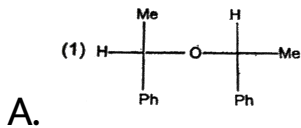
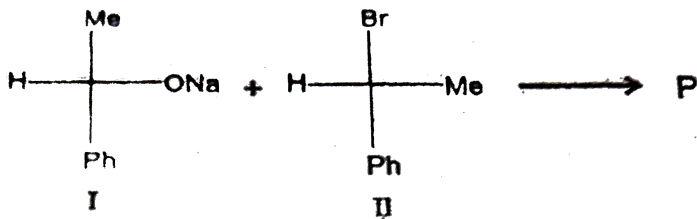
C. 6,3

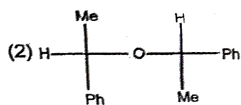
D. 8,4

Answer: 2

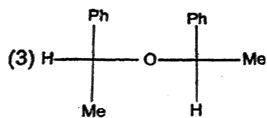
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49. The product in the given reaction is :

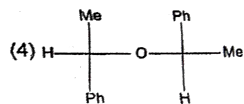




B.



C.

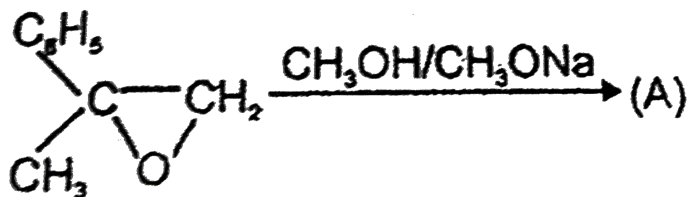


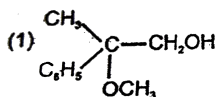
D.

Answer: 1

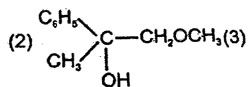
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50. In the given reaction A will be :

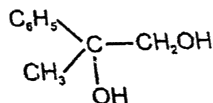




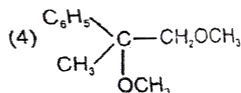
A.



B.



C.



D.

Answer: B



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51. Reaction between neopentyl bromide and ethanol gives 2-ethoxy-2-methylbutane as the

principal product . Which one of the following is not true about this reaction ?

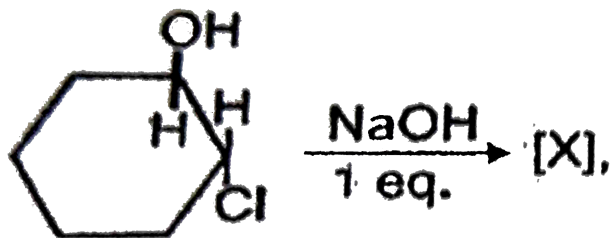
- A. This involves a 1, 2 – hydride shift
- B. This involves a 1, 2 – methyl shift.
- C. This occurs through a S_N1 mechanism
- D. This is accompanied with formation of alkenes as minor product

Answer: 2



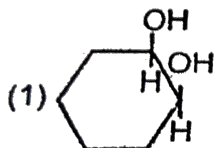
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52. In the given reaction

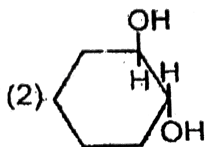


[X] will be :

[X] will be :

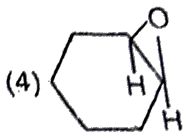


A.



B.

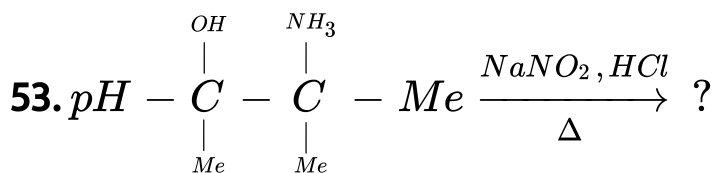
C. Mixture of (1) and (2)



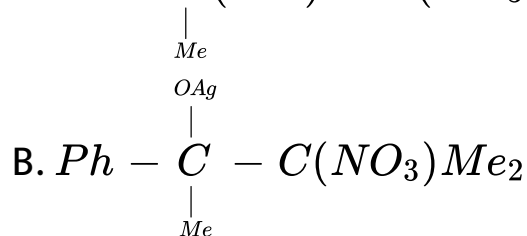
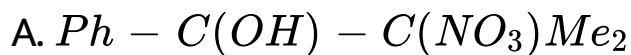
D.

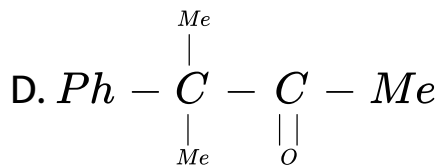
Answer: 4

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Major product is

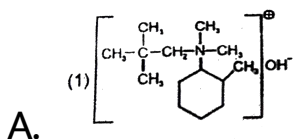
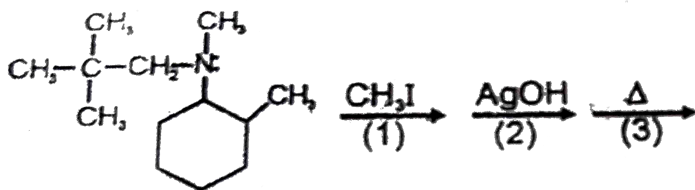




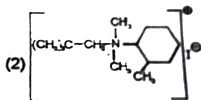
Answer: D

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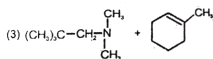
54. The major product of following sequence of reactions is



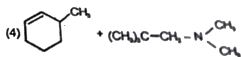
B.



C.



D.

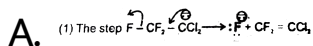


Answer: 4



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55. Select false statement from the following ?



B. *E* – 1 reaction can be regio selective .

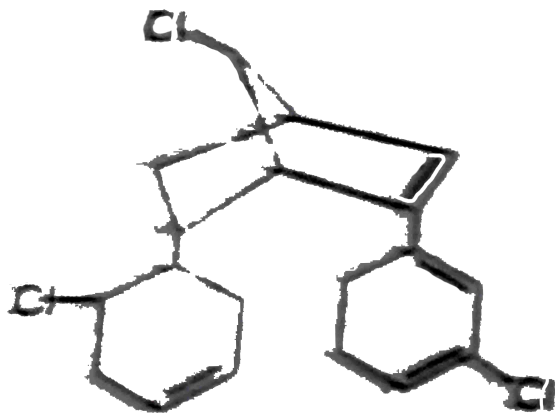
C. *S_N2* & *E2* reactions are stereo specific.

D. In $E1$ and $E2$ reactions inversion of configuration takes place.

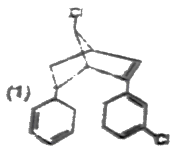
Answer: 4

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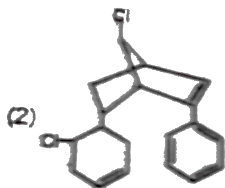
56. What is the product in following reaction ?



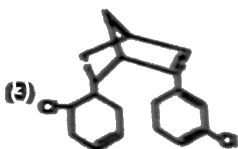
A.



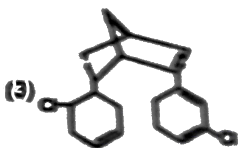
B.



C.



D.



Answer: 1



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