

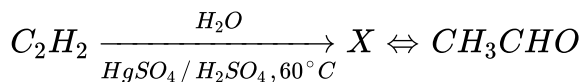
CHEMISTRY

PHYSICAL, INORGANIC, AND ORGANIC CHEMISTRY

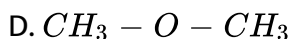
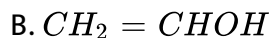
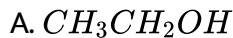
HYDROCARBON

Organic Chemistry Hydrocarbon

1. In the following reaction



What is X?



Answer: 2

 [Watch Video Solution](#)

2. Which of the following organic compounds has the same hybridization as its combustion product (CO_2) ?

A. Ethane

B. Ethyne

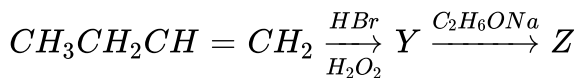
C. Ethene

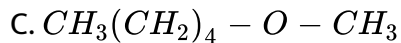
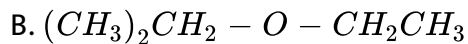
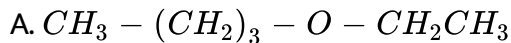
D. Ethanol

Answer: B

 [Watch Video Solution](#)

3. Identify Z in the sequence of reactions :

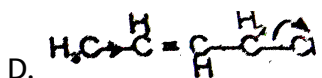
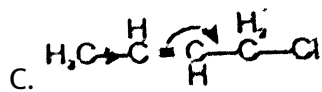
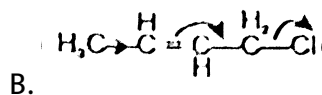
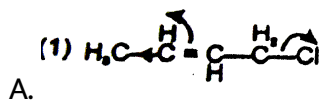




Answer: 1

 Watch Video Solution

4. Which of the following is the most correct electron displacement for a nucleophilic reaction to take place ?



Answer: B



Watch Video Solution

5. Addition of sodium to bromobenzene in dry ether will produce :

- A. Biphenyl
- B. Benzene
- C. Cyclohexane
- D. No reaction

Answer: 1



Watch Video Solution

6. The gas with the highest heat of combustion is :

- A. Methane

B. Ethane

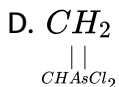
C. Ethylene

D. Acetylene

Answer: 2

 [Watch Video Solution](#)

7. Structural formula for lewisite is



Answer: 3

 [Watch Video Solution](#)

8. Acetylene and ethylene react with alkaline $KMnO_4$ to give

A. Actaldehyde

B. Oxalic acid

C. Acetic acid

D. Glycol

Answer: 2



[Watch Video Solution](#)

9. Benzene reacts with CH_3Cl in the presence of anhydrous $AlCl_3$ to form

A. Toluene

B. Chlorobenzene

C. Benzylchloride

D. Xylene

Answer: 1

 [Watch Video Solution](#)

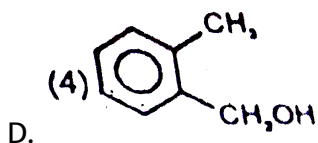
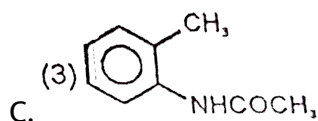
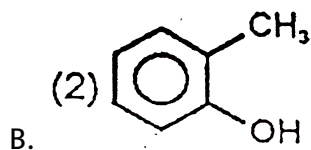
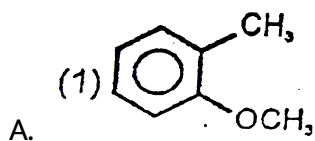
10. Petroleum mainly contains :

- A. Aromatic hydrocarbons
- B. Aliphatic hydrocarbons
- C. Cycloalkanes and aromatic
- D. Inorganic compounds

Answer: 2

 [Watch Video Solution](#)

11. Which one of the following is most reactive towards electrophilic reagent ?



Answer: 2

 [Watch Video Solution](#)

12. $CH_3C \equiv CCH_3 \xrightarrow[\text{CaCO}_3 \text{ and BaSO}_4]{\text{H}_2/\text{Pd}} P$ Identify the product .

A. cis-2-butene

B. trans-2-butene

C. 1-butyne

D. 1,3-butadiene

Answer: 1

 [Watch Video Solution](#)

13. The alkyl halides that can be made by free radical halogenation of alkanes are :

A. RCl , and RBr but not RF or RI

B. RF, RCl and RBr but not RI

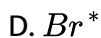
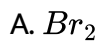
C. RF, RCl, RBr, RI

D. RF, RCl and RI but not RBr

Answer: 1

 Watch Video Solution

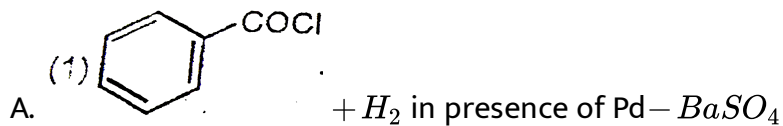
14. The species which acts as electrophile in the bromination of benzene is :

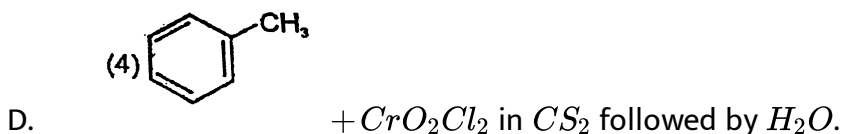
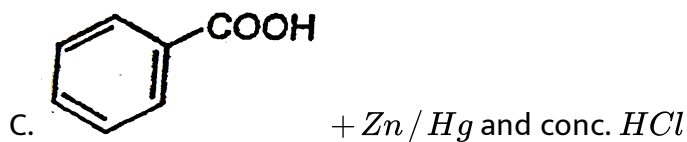
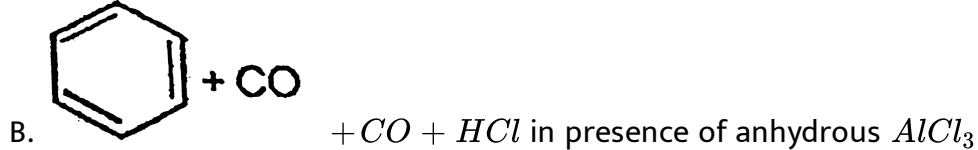


Answer: 3

 Watch Video Solution

15. Reaction by which Benzaldehyde cannot be prepared?





Answer: 3

 [Watch Video Solution](#)

16. Which of the following carbides on treatment with water give methane ?

- A. Silicon carbide
- B. Calcium carbide
- C. Beryllium carbide
- D. Magnesium carbide

Answer: 3

 [Watch Video Solution](#)

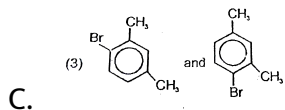
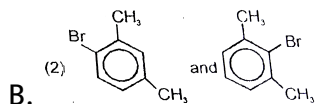
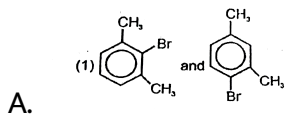
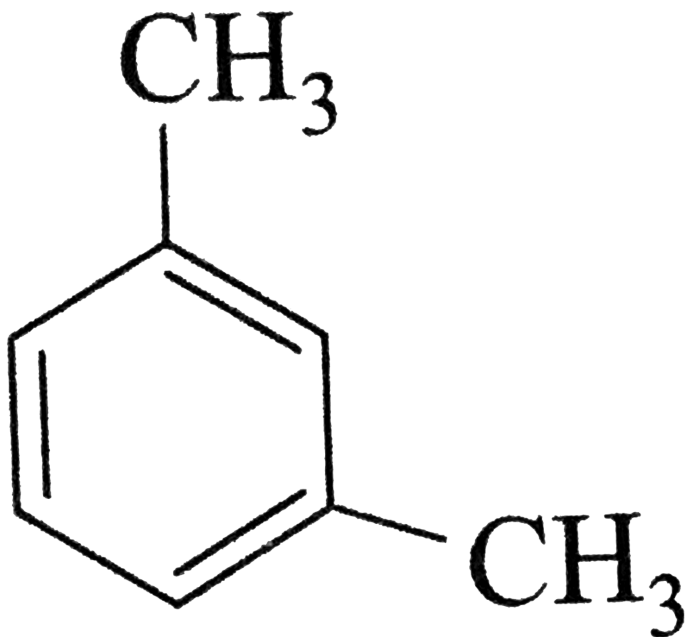
17. Propene, $CH_3 - CH = CH_2$, can be converted to 1-propanol by oxidation. Which set of reagents among the following is ideal to effect the conversion?

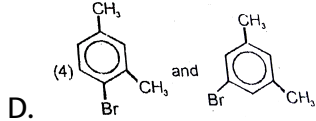
- A. $KMnO_4$ (alkaline)
- B. Osmium tetroxide (OsO_4 / CH_2Cl_2)
- C. B_2H_5 and alk. H_2O_2
- D. O_3 / Zn

Answer: 3

 [Watch Video Solution](#)

18. What products are formed when the following compounds are treated with Br_2 in the presence of $FeBr_3$?





Answer: 3

 [Watch Video Solution](#)

19. When HCl gas is passed through propene in the presence of benzoyl peroxide, it gives :

- A. 2 – chloropropane
- B. Allyl chloride
- C. No reaction
- D. n – propyl chloride

Answer: 1

 [Watch Video Solution](#)

20. Which of the following is the most reactive towards ring nitration ?

- A. Benzene
- B. Mesitylene
- C. Toluene
- D. *m* – xylene

Answer: 2



Watch Video Solution

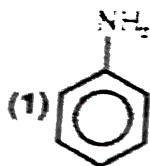
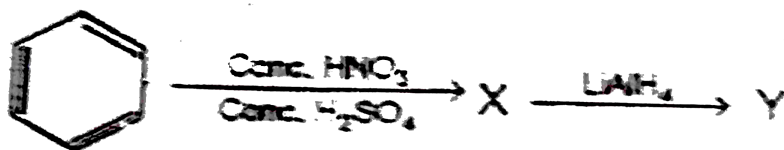
21. The treatment of benzene with isobutene in the presence of sulphuric acid gives

- A. isobutyl benzene
- B. tert-butyl benzene
- C. *n* – butyl benzene
- D. no reaction

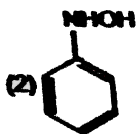
Answer: 2

 Watch Video Solution

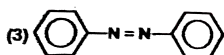
22. The product 'Y' in the following reaction sequence is :



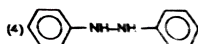
A.



B.



C.



D.

Answer: 3

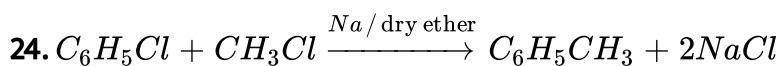
 [Watch Video Solution](#)

23. Which of the following has the highest knocking property ?

- A. Aromatic hydrocarbons
- B. Olefins
- C. Branched chain paraffins
- D. Straight chain paraffins

Answer: 4

 [Watch Video Solution](#)



This reaction is an example of :

- A. Wurz reaction
- B. Fittig reaction
- C. Wurtz-Fitting reaction
- D. Frankland reaction

Answer: 3

 [Watch Video Solution](#)

25. The reaction $CH_3COCH_3 \xrightarrow[\text{(ii) } KOH, \text{ glycol}]{\text{(i) } NH_2 - NH_2} CH_3CH_2CH_3$ is known as :

- A. Clemmensen's reduction
- B. Blanc's reduction
- C. Brich reduction
- D. Wolff-Kishner reduction

Answer: 4

 [Watch Video Solution](#)

26. Type of reactions shown by alkynes are —

- A. Electrophilic addition reactions
- B. Nucleophilic addition reactions
- C. Substitution reaction
- D. All of the above

Answer: 4



[Watch Video Solution](#)

27. Which of the following produces one mononitro and three isomeric dinitro derivatives ?

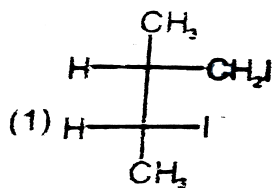
- A. Ethyl benzene
- B. *m* – xylene
- C. *o* – xylene

D. *p* - xylene

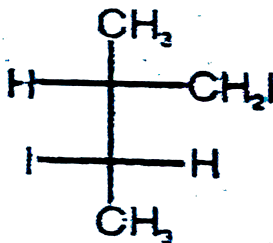
Answer: 4

 Watch Video Solution

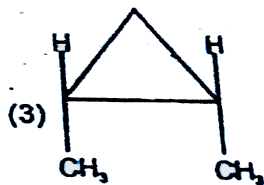
28. $CH_3 - C \equiv C - CH_3 \xrightarrow{Na/NH_3(i)} P \xrightarrow{OH_2l_2 \cdot Zn, \Delta}$ Product is :



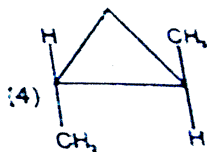
A.



B.



C.

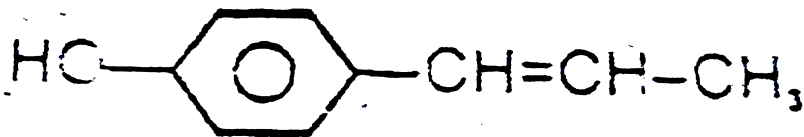


D.

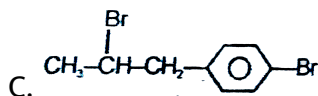
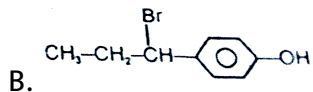
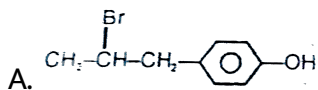
Answer: 4

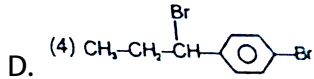
[▶ Watch Video Solution](#)

29. The reaction of HBr with



gives

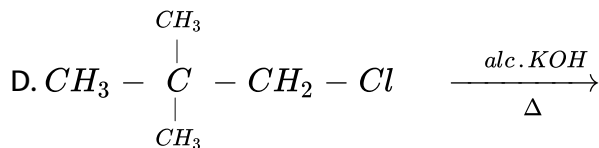
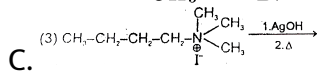
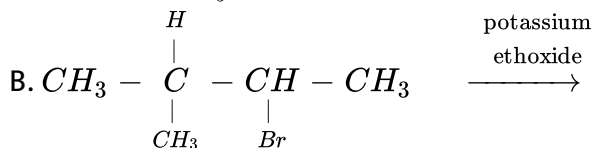
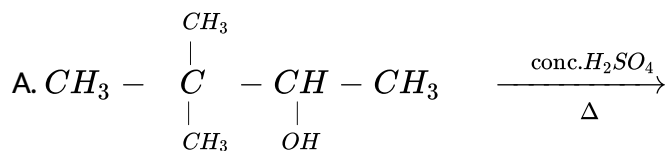




Answer: B

 Watch Video Solution

30. In which of the following Hoffmann elimination product is more ?



Answer: 3

 Watch Video Solution

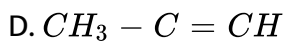
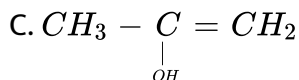
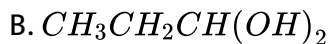
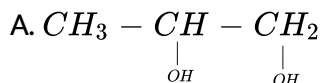
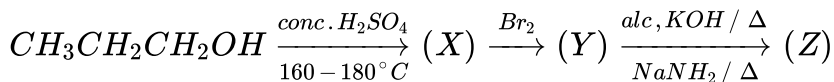
31. Which of the following is not aromatic?

- A. Benzene
- B. Cyclopropenyl cation
- C. Tropylium cation
- D. Cyclopentadienyl cation

Answer: 4

 [Watch Video Solution](#)

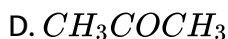
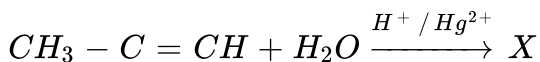
32. Identify Z in the series



Answer: 4

 [Watch Video Solution](#)

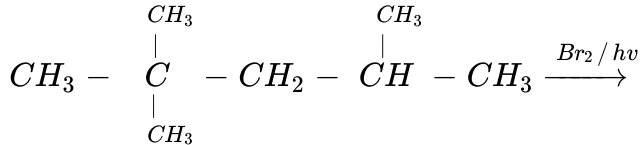
33. In the reaction, product 'X' is :



Answer: D

 [Watch Video Solution](#)

34. For the given reaction how many monochalo products are optically active (all isomers) :



A. 6

B. 2

C. 3

D. 4

Answer: D



Watch Video Solution

35. An isomer of C_5H_{12} gives total six isomeric products on monochlorination. Calculate the percentage yield of the primary monochloride which is chiral. Consider the following relative reactivity of $C - H$ bonds for chlorination.

Degree of $C - H$	$1^\circ C - H$	$2^\circ C - H$	$3^\circ C - H$
Relative reactivity for chlorination (R.R)	1	3	5

A. 26.8 %

B. 25 %

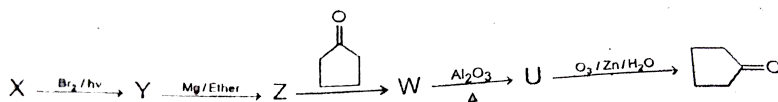
C. 30 %

D. 50 %

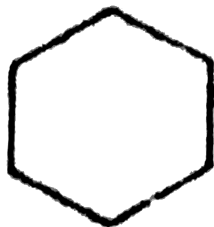
Answer: 3

 Watch Video Solution

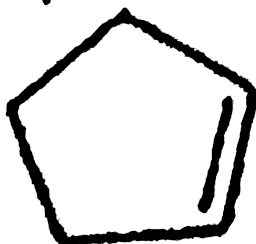
36. Observe the following reaction sequence



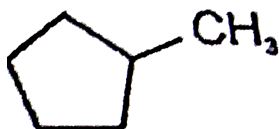
A.



B.



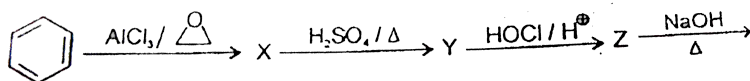
C.



D.

Answer: 1

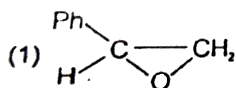
 Watch Video Solution



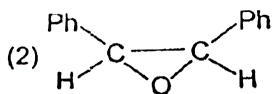
37.

The

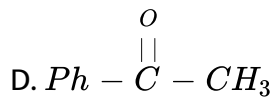
product 'W' is:



A.

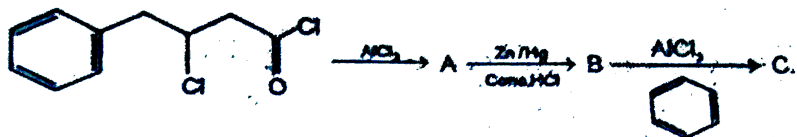


B.

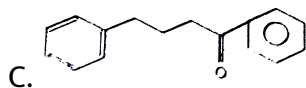
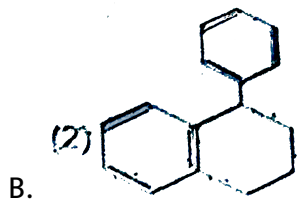
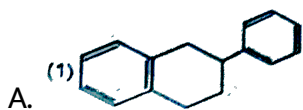


Answer: 1

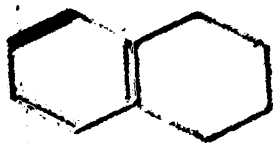
 Watch Video Solution



The product C is :



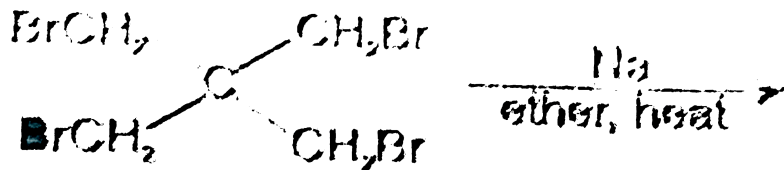
D.



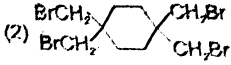
Answer: A


 Watch Video Solution


39. The product formed in the reaction



A. $(BrCH_2)_3CCH_2CH_2C(CH_2Br)_2$

B. 

C. 

D. 

Answer: 4



Watch Video Solution

40. Which statement is incorrect :

- A. Melting point of neo – pentane is greater than that of n – pentane but the boiling of n – pentane is more than that of neo – pentane.
- B. Melting point depends upon packing in crystal lattice whereas boiling point depends upon surface area of the molecule.
- C. Propene is less reactive than ethene towards electrophilic addition reaction.
- D. Electron density of double bond increases due to hyperconjugation of methyl group.

Answer: 3

41. Which statement is incorrect :

- A. Monobromination of 2 – methyl butane produces 3° bromide as major product whereas monochlorination of 2 – methyl butane produces 2° chloride as major product.
- B. Halogenation of alkane in presence of sunlight, is followed through free radical mechanism.
- C. In the reaction of propene with H_2O & Br_2/H_2O it acts as nucleophile.
- D. Alkanes undergo electrophilic substitution reaction generally.

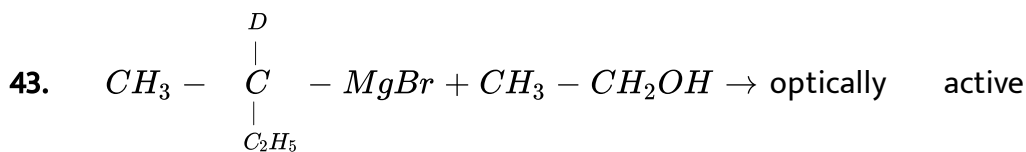
Answer: 4

42. The minimum heat of reaction is required in the formation of :

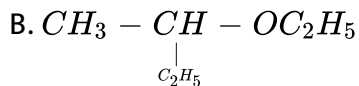
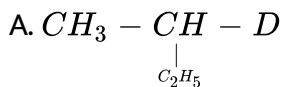
- A. Methyl radical
- B. Ethyl radical
- C. *n* – propyl radical
- D. tert – butyl radical

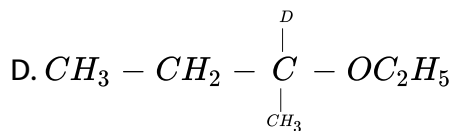
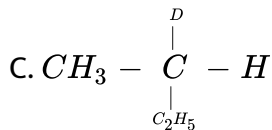
Answer: 4

 Watch Video Solution



product 'x'. Here 'x' is :

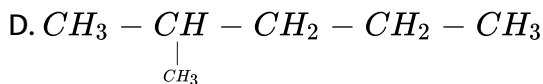
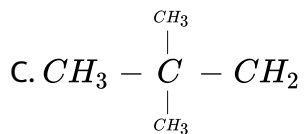
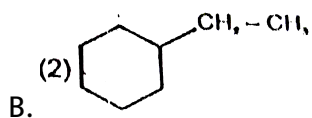
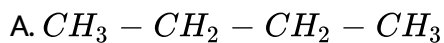




Answer: 3

 Watch Video Solution

44. Using corey - house synthesis we can't prepare
from ethylbromide.

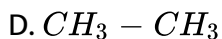


Answer: C



Watch Video Solution

45. During the electrolysis of sodium ethanoate, the gas liberated at cathode is :



Answer: A



Watch Video Solution

46. During Kolbe's electrolytic method, the pH of aqueous solution of salt of acid

A. increases

B. decreases

C. remains same

D. can not be predicted

Answer: A

 [Watch Video Solution](#)

47. In Kolbe's electrolysis sodium propanoate gives :

A. $CH_3 - CH_3$

B. $CH_2 = CH_2$

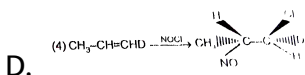
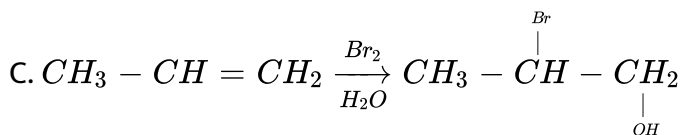
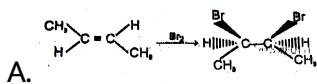
C. $CH_3 - CH_2 - CH_2 - CH_3$

D. A mixture of 1,2 and 3

Answer: 4

 [Watch Video Solution](#)

48. Which reaction shows the correct stereo chemical structure of product ?



Answer: 1

 [Watch Video Solution](#)

49. Identify the incorrect statement / statement :

(i) Alkynes are more reactive than alkenes towards electrophilic addition reaction

(ii) Alkynes are less reactive than alkenes towards electrophilic addition reaction

(iii) Alkynes decolourise Br_2 water

(iv) Addition of HBr to alkenes in presence of peroxide proceeds via

Markownikoff's rule

A. (i)&(ii)

B. (ii)&(iii)

C. (i)&(iii)

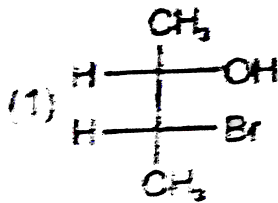
D. (ii)&(iv)

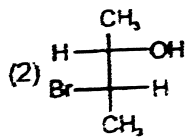
Answer: 3



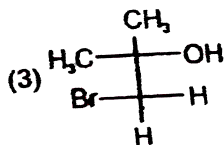
Watch Video Solution

50. *cis* - 2 - Butane \xrightarrow{HOBr} *P*, Identify product '*P*' is :

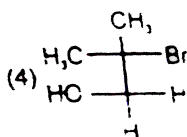




B.



C.



D.

Answer: 2

 Watch Video Solution