



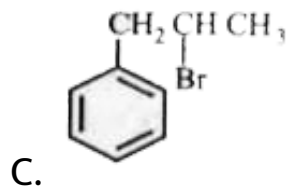
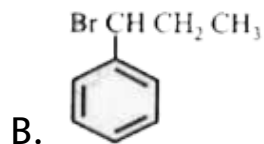
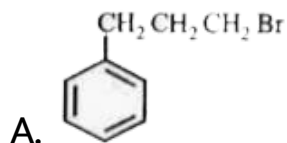
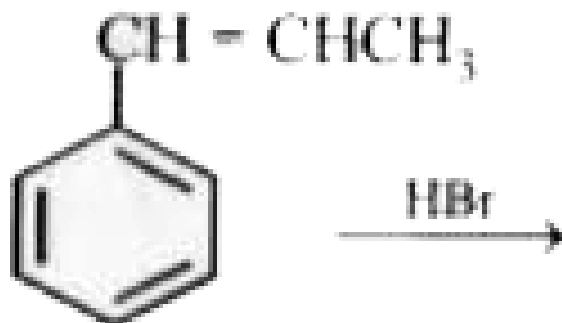
# CHEMISTRY

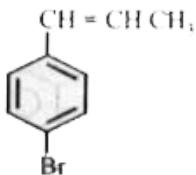
## BOOKS - DISHA PUBLICATION CHEMISTRY (HINGLISH)

### HYDROCARBONS

**Jee Main 5 Years At A Glance**

1. The major product of the following reaction is :





D.

**Answer: b**

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2. The trans-alkenes are formed by the reduction of alkynes with

A.  $H_2 - Pd/C, BaSO_4$

B.  $NaBH_4$

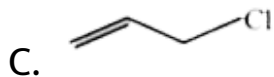
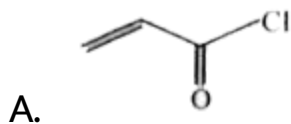
C.  $Na / liq. NH_3$

D. Sn- HCl

Answer: c

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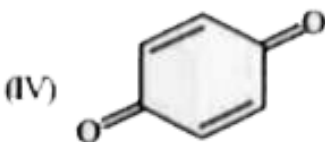
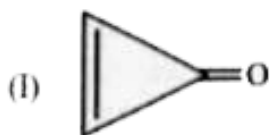
3. Which of the following compounds will not undergo Friedel Craft's reaction with benzene ?



Answer: b

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4. Which of the following compounds will show highest dipole moment ?



A. (I)

B. (II)

C. (III)

D. (IV)

Answer: a

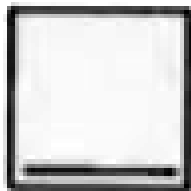
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5. Which of the following compounds is most reactive to an aqueous solution of sodium carbonate ?

A.



B.





C.



D.

**Answer: c**

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6. 3-menthyl-pent-2-ene on reaction with HBr in presence of peroxide forms an addition product. The number of possible stereoisomers for the product is

A. Six

B. Zero

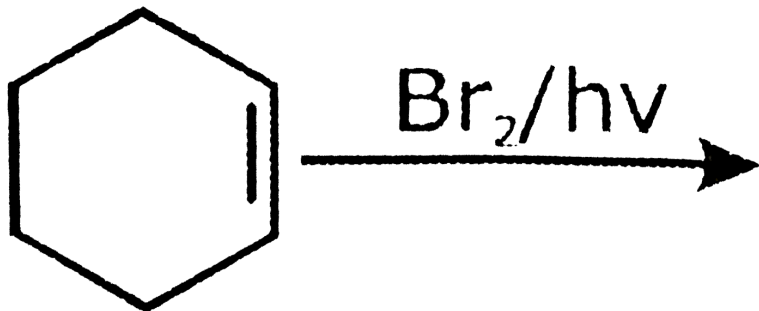
C. Two

D. Four

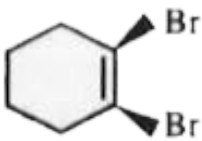
**Answer: d**

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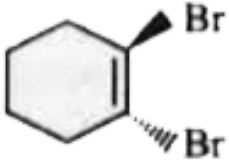
7. Bromination of cyclohexene under conditions given below yields :



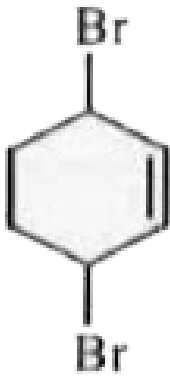




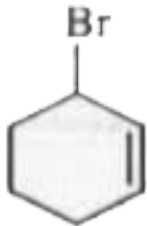
A.



B.



C.

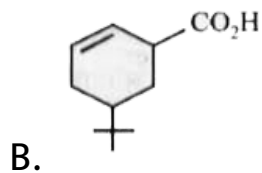
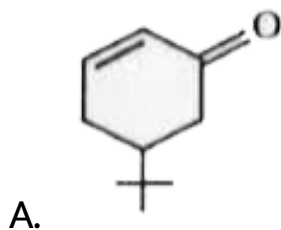
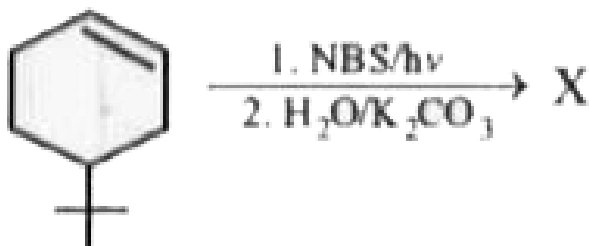


D.

Answer: d

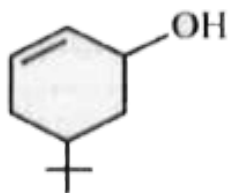


8. The product of the reaction given below is :





C.

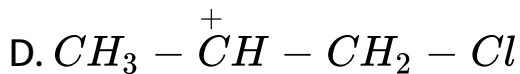
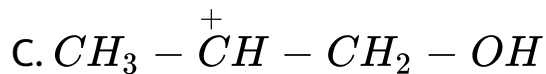
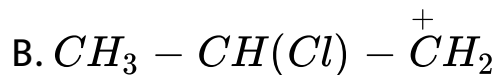
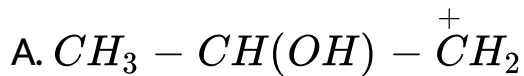


D.

**Answer: d**

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9. The reaction of propene with  $HOCl(CI_2 + H_2O)$  proceeds through the intermediate:

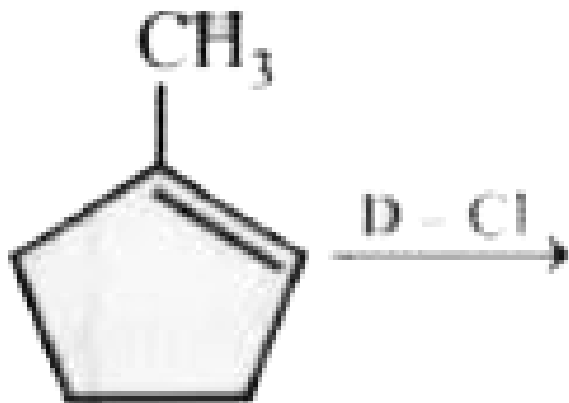


Answer: d

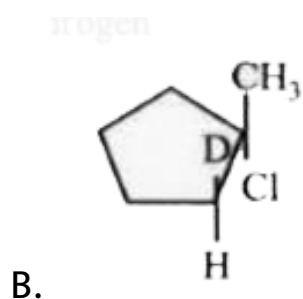
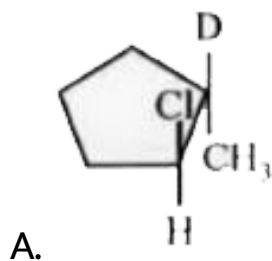


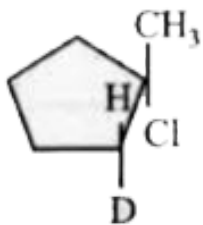
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10. What is the major product expected from the following reaction ?

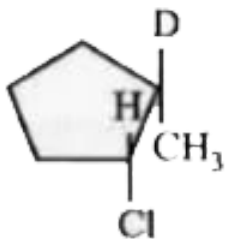


Where D is an isotope of hydrogen .





C.

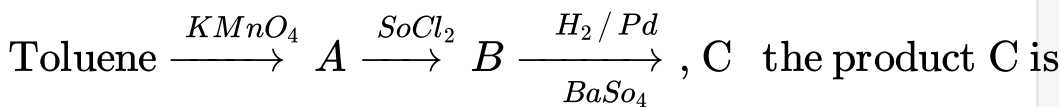


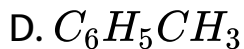
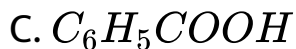
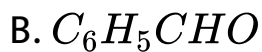
D.

Answer: b,c

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11. In the following sequence of reactions



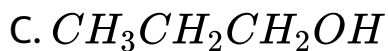
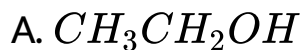


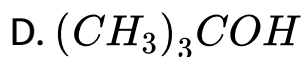
**Answer: b**



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**12. Propene on hydroboration and oxidation produces**





**Answer: c**



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**13.** Which one of the following class of compounds is obtained by polymerization of acetylene?

A. Poly - yne

B. Poly - ene

C. Poly - ester

D. Poly - amine



Answer: b

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14. The reagent needed for converting

$\text{Ph} - \text{C} = \text{C} - \text{Ph}$  to

(##DSH\_NTA\_JEE\_MN\_CHE\_C13\_E01\_014\_Q01.png"

width="80%"> is :

A. Cat . Hydrogenation

B.  $H_2$ /Lindlar Cat .

C.  $\text{Li}/\text{NH}_3$

D.  $\text{LiAlH}_4$

**Answer: c**



**View Text Solution**

**15.** The gas liberated by the electrolysis of dipotassium succinate solution is :

- A. Ethane
- B. Ethyne
- C. Ethene
- D. Propane

**Answer: c**



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## Exercise 1 Concept Builder Topic Wise

1. Arrange the following in decreasing order of their boiling points .

(A) n-butane (B) 2-methylbutane

(C) n-pentane (D) 2,2-dimethylpropane

A.  $A > B > C > D$

B.  $B > C > D > A$

C.  $D > C > B > A$

D.  $C > B > D > A$

**Answer: d**



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2. In the eclipsed conformation of ethane , the dihedral angle between the hydrogen atoms of adjacent methyl groups is

A.  $60^\circ$

B.  $120^\circ$

C.  $0^\circ$

D.  $180^\circ$

**Answer: c**



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3. Arrange the following conformations of ethane in the order of decreasing stability

A. eclipsed > gauche < staggered

B. eclipsed > staggered > gauche

C. staggered > gauche > eclipsed

D. gauche > staggered > eclipsed

**Answer: c**



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4. In the following the most stable conformation of *n*-butane is:

A. skew boat

B. gauche

C. staggerd - anti

D. eclipsed

**Answer: c**



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5. For preparing an alkane , a concentrated aqueous solution of sodium or potassium salt of saturated

carboxylic acid is subjected to

A. hydrolysis

B. oxidation

C. hydrogenation

D. elctrolysis

**Answer: d**



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6. Which of the following liberates methane on treatment with water ?

A. Silicon carbide

B. Calcium carbide

C. Beryllium carbide

D. Magnesium carbide

**Answer: c**



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7. The reaction/method that does not give an alkane is

A. catalytic hydrogenation of alkenes

B. dehydrohalogenation of an alkyl halide

C. hydrolysis of alkylmagnesium bromide



## D. Kolbe's electrolytic method

**Answer: b**

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8. To prepare a pure sample of n-hexane, using sodium metal as one reactant, the other reactant or reactants will be:

- A. ethyl chloride and n - butyl chloride
- B. methyl bromide and n - pentyl bromide
- C. n - propyl bromide
- D. ethyl bromide and n - butyl bromide

**Answer: c**

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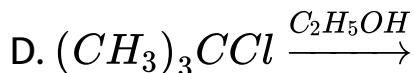
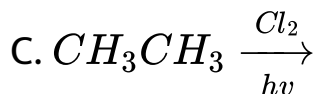
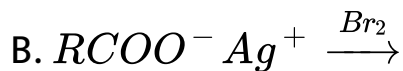
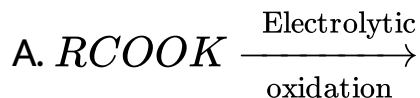
9. In Wurtz reaction , if we take  $CH_3Cl$  and  $C_2H_5Cl$  then product , will be

- A. propane + ethane
- B. propane
- C. propane + ethane + butane
- D. propane + butane

**Answer: c**

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10. Which of the following reactions would give a good yield of hydrocarbon product ?



Answer: a



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11. 2 – Methylbutane on reacting with bromine in the presence of sunlight gives mainly

A. 1 - bromo - 3 - methylbutane

B. 2 - bromo - 3- methylbutane

C. 2 - bromo - 2- methylbutane

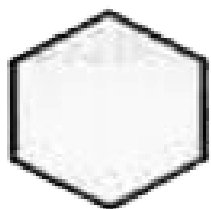
D. 1 - bromo - 2- methylbutane

**Answer: c**



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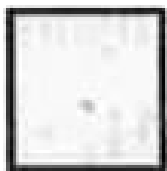
12. The cycloalkane having the lowest heat of combustion per  $CH_2$  group



A.



B.



C.



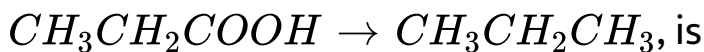
D.

**Answer: a**



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**13.** The reagent used for the conversion



A.  $LiAlH_4$

B. soda-lime

C. red P and concentrated HI

D. Zn - Hg/Conc . HCl

**Answer: c**



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14. When isobutane is treated with bromine at  $127^{\circ}C$ , the product formed is

A. a mixture of isobutyl bromide and tertiary - butyl bromide .

B. a mixture of secondary - butyl bromide and tertiary - butyl bromide .

C. a mixture of isobutyl bromide , secondary - butyl bromide and tertiary - butyl bromide as the major product .

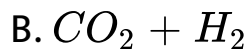
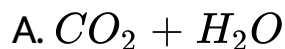
D. almost 100 % tertiary - butyl bromide .

Answer: d



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15. Complete combustion of  $CH_4$  gives :



Answer: a



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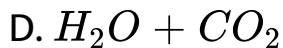
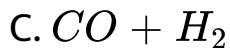
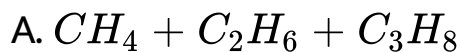
16. In commercial gasolines the type of hydrocarbons which are more desirable , is

- A. branched hydrocarbons
- B. stright - chain hydrocarbons
- C. aromatic hydrocarbons such as toluene
- D. linear unsaturated hydrocarbons

**Answer: a**

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17. Natural gas is a mixture of



**Answer: a**



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**18.** A petroleum fraction having boiling range  $70 - 200^\circ C$  and containing 6 - 10 carbon atoms per molecule is called

A. natural gas

B. gas oil

C. gasoline

D. kerosene

**Answer: c**



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**19.** Which of the following compounds does not dissolve in conc.  $H_2SO_4$  even on warming ?

A. Ethylene

B. Benzene

C. Hexane

D. Aniline

**Answer: c**



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**20.** Which one of the following heptanols can be dehydrated to hep-3-ene only?

A. Heptan - 3- ol

B. Heptan - 4 - ol

C. Heptane - 2- ol

D. Heptane - 1 - ol

**Answer: b**

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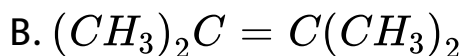
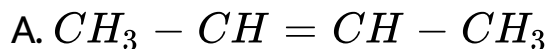
21. Isobutene is the exclusive product of dehydrohalogenation ( by a strong base ) of

- A. isobutyl chloride
- B. tert - butyl bromide
- C. both (a) and (b)
- D. neither (a) nor (b)

**Answer: c**

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22. Compound which gives acetone on ozonolysis



Answer: b



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23. Correct statement about 1, 3 - butadiene is

A. Conjugated double bonds are present

B. Reacts with HBr

C. Forms polymer

D. All of these

**Answer: d**



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**24.** Allene ( $C_3H_4$ ) contains,

A. one double bond , one triple bond and one single bond .

B. one triple and two double bonds .

C. two triple and one double bonds

D. two double and four single bonds .

**Answer: d**

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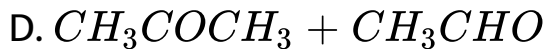
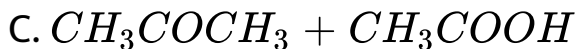
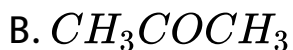
25. The compound  $CH_3 - \overset{CH_3}{\underset{|}{C}} = CH - CH_3$

on reaction with  $NaIO_4$  in the presence of  $KMnO_4$

gives

A.  $CH_3CHO + CO_2$





**Answer: c**



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**26.** Reaction of  $HBr$  with propene in the presence of peroxide gives

A. isopropyl

B. 3 - bromo propane

C. ally bromide

D. n - propyl bromide

**Answer: d**



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27. Acid catalyzed hydration of alkenes except ethene leads to the formation of

- A. mixture of secondary and tertiary alcohols
- B. mixture of primary and secondary alcohols
- C. secondary or tertiary alcohol
- D. primary alcohol

**Answer: c**



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**28.** A compound 'X' on ozonolysis followed by reduction gives an aldehyde,  $C_2H_4O$  and 2-butanone.

Compound 'X' is:

A. 3 - methylpentane - 2

B. 3 - methylpentene - 3

C. 3 - methylhexene - 3

D. 3 - ethylpentene - 3

**Answer: a**



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29. Select the incorrect statement.

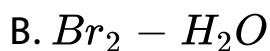
- A. Bromine is more selective and less reactive
- B. Chlorine is less selective and more reactive
- C. Benzyl free radical is more stable than  $2^\circ$  free radical .
- D. Vinyl free radical more stable than alkyl radical .

Answer: d



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30. Conversion of cyclohexene to cyclohexanol can be conveniently achieved by:



C. hydroboration , oxidation

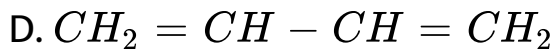
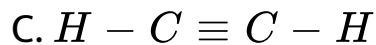
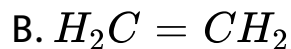
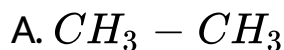
D. hydroboration hydrolysis

**Answer: c**



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31. 



**Answer: c**



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32. Addition of  $BH_3$  followed by  $H_2O_2$  to trans-2-butene would give a product which is:

A. achiral

B. racemic

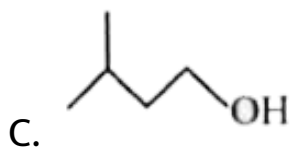
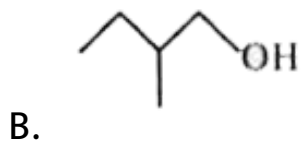
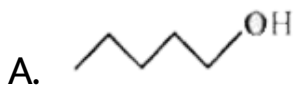
C. meso

D. optically active

Answer: b

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33. Which of the following alcohols cannot be prepared from hydration of an alkene?

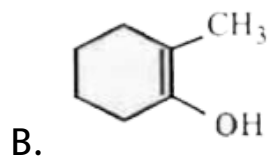
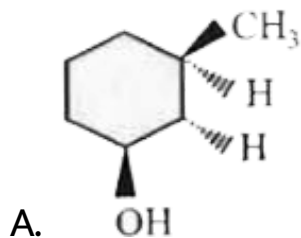




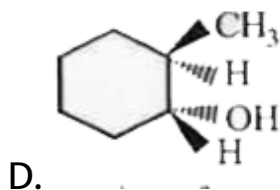
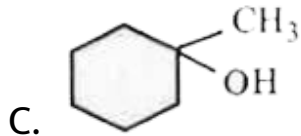
Answer: d

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34. What is the correct product of reaction ?





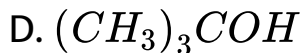
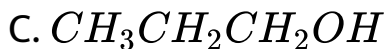


Answer: d

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35. In the hydroboration - oxidation reaction of propane with diborane,  $H_2O_2$  and NaOH, the organic compound formed is :

A.  $CH_3CH_2OH$

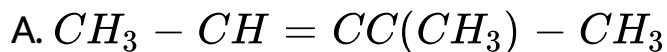


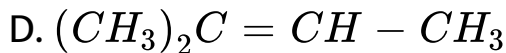
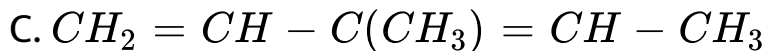
Answer: c



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36. One mole of an unsaturated hydrocarbon on ozonolysis gives one mole each of  $CH_3CHO$ ,  $HCHO$ , and  $OCH - CHO$ . The hydrocarbon is



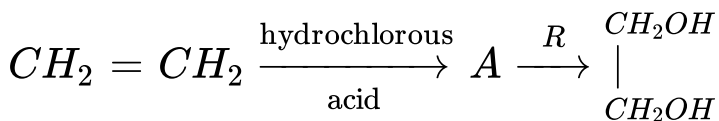


Answer: c

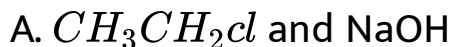


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37. In the reaction sequence



$A$  and  $R$  are respectively



C.  $CH_2ClCH_2OH$  and aqueous  $NaHCO_3$

D.  $\begin{array}{c} CH_2 - CH_2 \text{ and heat} \\ \diagdown \quad / \\ O \end{array}$  and heat

Answer: c

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38. Hyperconjugation is more pronounced in

A. 2 - methylpropene

B. but -2-ene

C. 2,3 -dimethylbut - 2- ene

D. 2- methylbut -2-ene

**Answer: c**



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**39.** Anti - Markovinioff additio of HBr is not observed in

A. propane

B. 1 - butene

C. but - 2- ene

D. pent - 2 - ene

**Answer: c**



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40. In preparation of alkene from alcohol using  $Al_2O_3$ , which is the effective factor:

- A. Temperature
- B. Concentration
- C. Surface area of  $Al_2O_3$
- D. Porosity of  $Al_2O_3$

**Answer: a**



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41. In the presence of peroxide, hydrogen chloride and hydrogen iodide do not give anti-Markovnikov's addition to alkenes because:

- A. one of the steps is endothermic in HCl and HI
- B. both HCl and HI are strong acids
- C. HCl is oxidizing and the HI is reducing
- D. all the steps are exothermic in HCl and HI

**Answer: a**



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42. The reaction of  $CH_3CH =$



with  $HBr$

gives

A.  $CH_3CHBrCH_2$

(##DSH\_NTA\_JEE\_MN\_CHE\_C13\_E02\_042\_001.png"

width="30%")>

B.  $CH_3CH_2CHBr$

(##DSH\_NTA\_JEE\_MN\_CHE\_C13\_E02\_042\_002.png"

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C.  $\text{CH}_3\text{CHBrCH}_2$

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D.  $\text{CH}_3\text{CH}_2\text{Br}$

(##DSH\_NTA\_JEE\_MN\_CHE\_C13\_E02\_042\_004.png"

width="30%">

**Answer: b**



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**43.** If heat of hydrogenation of 1,3 - pentadiene and 1,4 - pentadiene are X and Y kcal respectively , heat of

hydrogenation of 2,3 - pentadiene will be

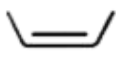
- A. between X and Y
- B. less than X as well as Y
- C. greater than X as well as Y
- D. it can't be predicted

**Answer: c**

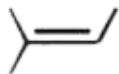


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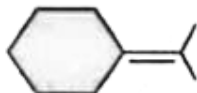
**44.** The relative rate of catalytic hydrogenation of the following alkenes is :



I



II



III



IV

A.  $I > II > III > IV$

B.  $III > II > I > IV$

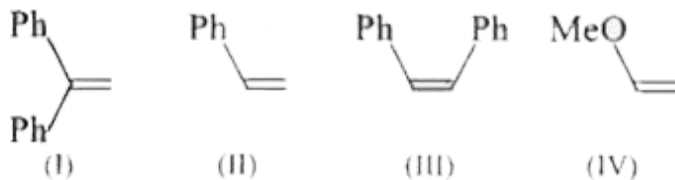
C.  $IV > I > II > III$

D.  $IV > I > II = III$

Answer: c

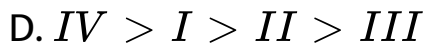
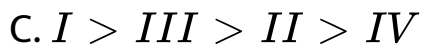
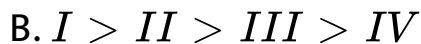
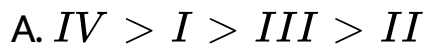


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45.

Order of rate of electrophilic addition reaction with HBr will be :

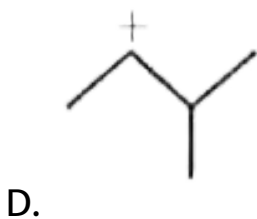
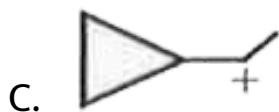
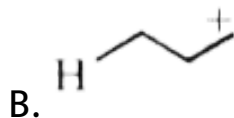
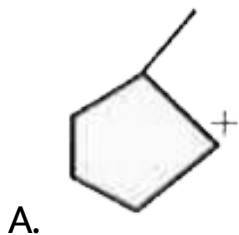


Answer: d



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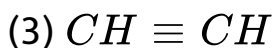
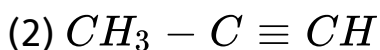
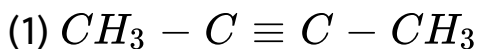
46. Which of the following would not rearrange to a more stable form?



Answer: c

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47. The correct increasing order of acidity of the following alkynes is :



A.  $1 < 2 < 3$

B.  $2 < 3 < 1$

C.  $3 < 2 < 1$

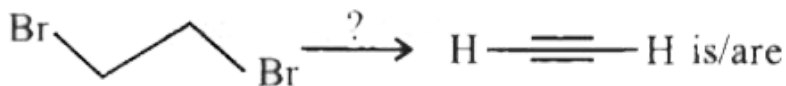
D.  $1 < 3 < 2$

**Answer: a**



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48. The reagent (s) for the following conversation



A. alcoholic KOH

B. alcoholic KOH followed by  $\text{NaNH}_2$

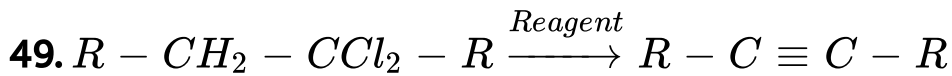
C. aqueous KOH followed by  $\text{NaNH}_2$

D.  $\text{Zn}/\text{CH}_3\text{OH}$

Answer: b



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The reagent is

A. Na

B. HCl in  $H_2O$

C. KOH in  $C_2H_5OH$

D. Zn in alcohol

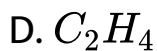
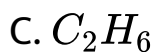
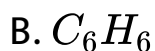
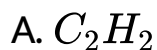
**Answer: c**



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50. A compound is treated with  $NaNH_2$  to give sodium salt. Identify the compound-



**Answer: a**



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51. Which of these will not react with acetylene?

A. NaOH

B. Ammonical  $AgNO_3$

C. Na

D. HCl

**Answer: a**

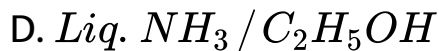


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52. Which of the following reagent is used for the conversion of 2 - hexyne into trans 2- hexene

A.  $H_2 / Pd / BaSO_4$

B.  $H_2, PtO_2$



**Answer: d**



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**53.** In the reaction



the product formed is .

A. propene

B. propyne

C. propyne and propene

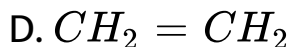
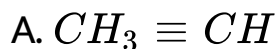
D. 4 - methylpentyne - 2

Answer: c



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54. Ammoniacal silver nitrate forms a white precipitate easily with:



**Answer: a**



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55. When acetylene is passed through dil.  $H_2SO_4$  in the presence of  $HgSO_4$ , the compound formed is

A. ether

B. acetaldehyde

C. acetic acid

D. ketone

**Answer: b**



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56. Identify a reagent from the following list which can easily distinguish between 1-butyne and 2-butyne.

A. bromine ,  $CCl_4$

B.  $H_2$ Lindlar catalyst

C. dilute  $H_2SO_4$ ,  $HgSO_4$

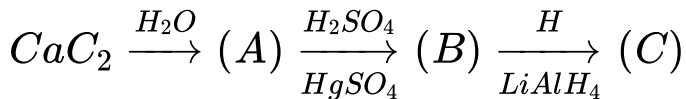
D. ammonical  $Cu_2Cl_2$  solution

Answer: d



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57. The end product of the following sequences of operations is:



A. Methyl alcohol

B. acetaldehyde

C.  $C_2H_5OH$

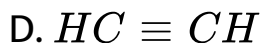
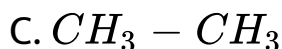
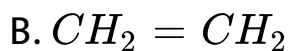
D.  $C_2H_4$

**Answer: c**



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58. Combustion of which of the following compounds (in the presence of excess of oxygen) does not result in the change in the hybrid state of carbon atom?



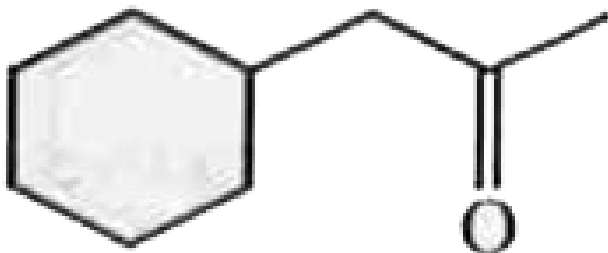
Answer: d



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59. Choose the correct alkyne and reagents for the preparation of



A. 

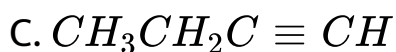
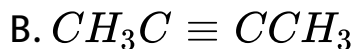
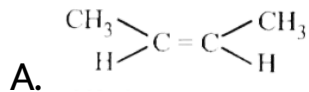
B. 

**Answer: b**



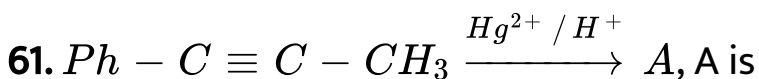
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60. Which of the following has lowest dipole moment?

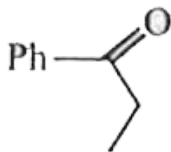


Answer: b

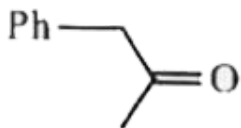
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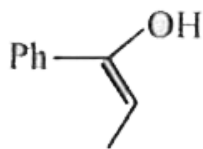
A.



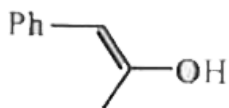
B.



C.



D.

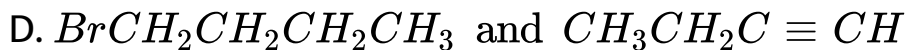
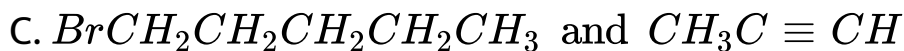
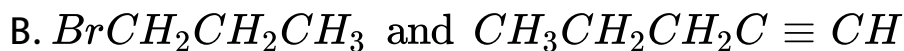
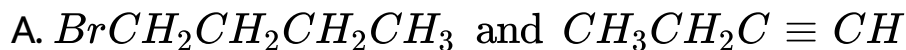


**Answer: a**



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62. The synthesis of 3-octyne is achieved by adding a bromoalkane into a mixture of sodium amide and an alkyne. The bromo alkane and alkyne respectively are:

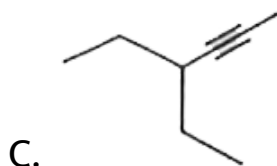
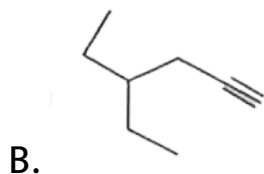
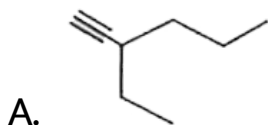


Answer: d



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63. Which alkyne will give 3-ethylhexane on catalytic hydrogenation?



D. All of these

Answer: d

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64. Reduction of 2 - butyne with sodium in liquid ammonia gives predominantly

A. cis - 2- butene

B. n - butane

C. trans - 2- butene

D. None of these

**Answer: c**



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65. Acetylene reacts with  $HCN$  in the presence of  $Ba(CN)_2$  to yield :

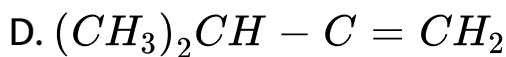
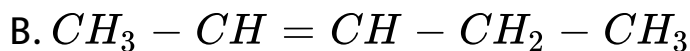
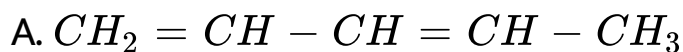
- A. 1,1- dicyanothane
- B. 1,2 - dicyanoethane
- C. vinyl cyanide
- D. None of these

**Answer: c**



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66. A compound ( $C_5H_8$ ) reacts with ammoniacal  $AgNO_3$  to give a white precipitate and reacts with excess of  $KMnO_4$  solution to give  $(CH_3)_2CH - COOH$ . The compound is



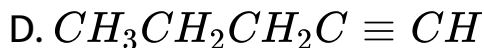
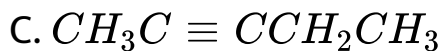
Answer: c



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67. Which one of the following compounds react with methylmagnesium iodide?



Answer: d



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68. But- 2-yne contains :

A.  $sp$  hybridised carbon atoms only

B.  $sp^3$  hybridised carbon atoms only

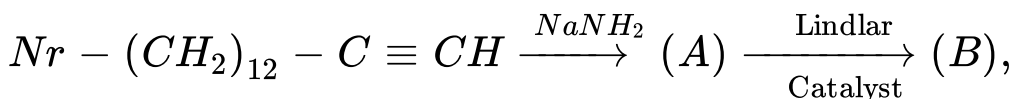
C. both  $sp$  and  $sp^2$  hybridised carbon atoms

D. both  $sp$  and  $sp^3$  hybridised carbon atoms

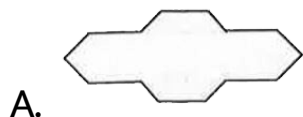
Answer: d

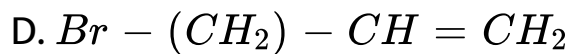
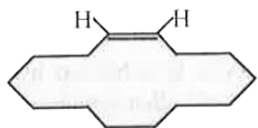
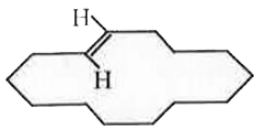
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69.



Product (B) is:

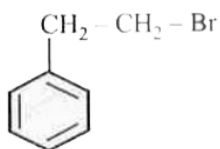


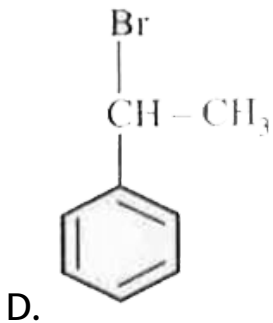
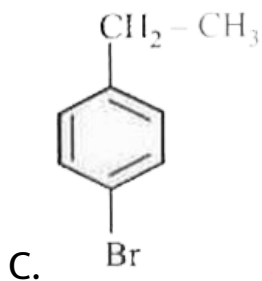
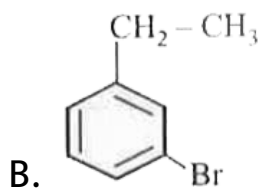


Answer: c

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70. The product of the reaction between ethyl benzene and N - bromosuccinamide is





Answer: d

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71. n- Butylbenzene on oxidation will give

- A. benzoic acid
- B. butanoic acid
- C. benzyl alcohol
- D. benzaldehyde

**Answer: a**

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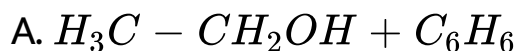
72. Aromatic compounds burn with a sooty flame because

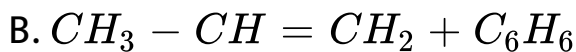
- A. they have a ring structure of carbon atoms
- B. they have a relatively high percentage of carbon
- C. they have a relatively percentage of carbon
- D. they resist reaction with oxygen of air

**Answer: c**

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**73.** Using anhydrous  $AlCl_3$  as catalyst, which one of the following reactions produces ethylbenzene ( $PhEt$ ) ?





**Answer: c**



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**74. Ozonolysis of benzene gives**

A. benzene trozonide

B. glyoxal

C. ethanediol

D. all of them

**Answer: a**



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**75.** An organic compound 'X' - (molecular formula  $C_6H_7O_2N$ ) has six atoms in a ring system two double bonds and a nitro group as substituent , 'X' is

A. heterocyclic

B. homocyclic and aromatic

C. aromatic but not homocyclic

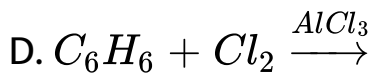
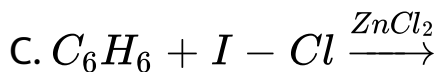
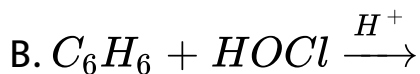
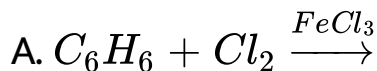
D. homocyclic but not aromatic



Answer: d

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76. Chlorination of benzene is not possible in the following reaction :



Answer: b

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77. The most reactive among the following towards sulphonation is

A. toluene

B. chlorobenzene

C. nitrobenzene

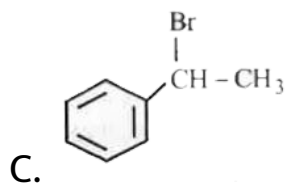
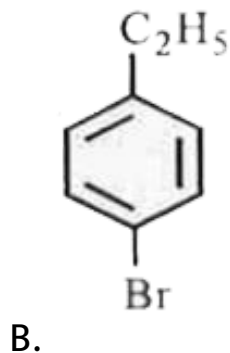
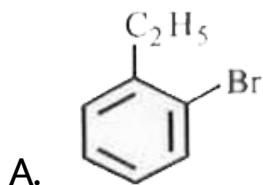
D. m - Xylene

**Answer: d**



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78. Bromination of ethyl benzene in presence of light gives



D. Both (a) and (b)

**Answer: c**



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79. Benzene reacts with  $CH_3COCl$  in the presence of anhydrous  $AlCl_3$  to give

A. increase the chance for collision between



B. decrease collision between



C. both (a) and (b)

D. decrease the chance for collision between



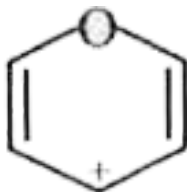
Answer: c

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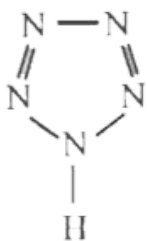
80. Which of the following is an antiaromatic compound ?



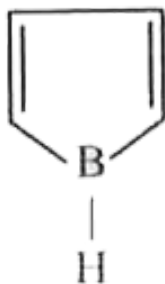
A.



B.



C.



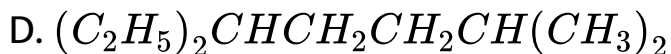
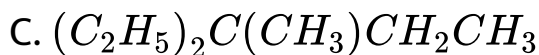
D.

**Answer: d**

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**Exercise 2 Concept Applicator**

1. Which of the following compound has twice the number of primary hydrogens as the number of secondary hydrogens ?



**Answer: c**



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2. The simplest chiral alkane will have how many carbon atoms ?

A. 4

B. 6

C. 7

D. 8

**Answer: c**



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3. On mixing certain alkane with chlorine and irradiating it with ultraviolet light, it forms only one monochloroalkane. The alkane is

A. pentane

B. isopentane

C. neopentane

D. propane

**Answer: c**



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4. A hydrocarbon (A) on chlorination gives (B), which on reacting with alcoholic KOH changes into another hydrocarbon (C). The latter decolorizes Bayer's reagent and on ozonolysis forms formaldehyde only (A) is:

A. Ethane

B. butane

C. methane

D. ethene

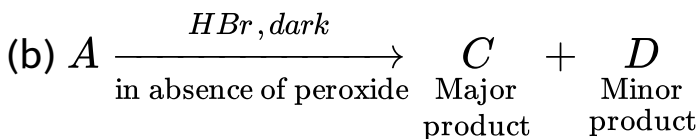
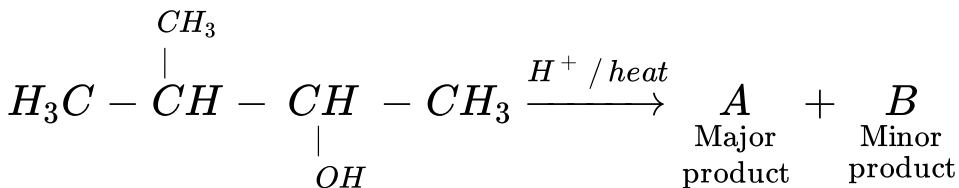
**Answer: a**



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5. In the following reactions,

(a)



The major products (A) and (C) are respectively:

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6. Ozonolysis of  $C_7H_{14}$  gave 2-methylpentan-3-one. The alkene is

A. 2-ethyl - 3 - methyl - 1 - butene

B. 3 - ethyl - 2- methyl - 3- butene

C. 2,5 - dimethyl - 3, 4 - dimethylhex - 3- ene

D. 3 - ethyl - 2- methyl - 1- butene

**Answer: a**

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7. Which of the following is identical in cis - 3- hexene and trans - 3- hydrogenation

A. Rate of hydrogenation

B. Product of hydrogenation

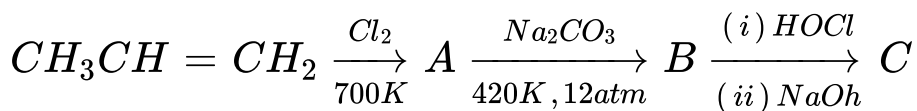
C. Adsorption of alumina

D. None of the three is identical

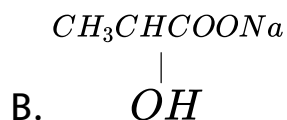
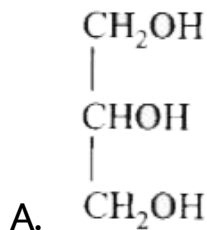
Answer: b

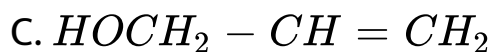
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8. Consider the following sequence of reactions



Compound 'C' is

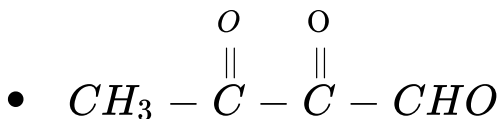
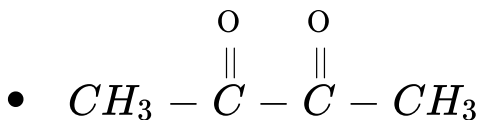
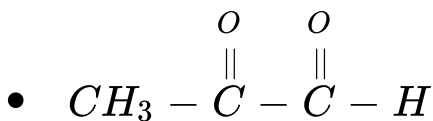
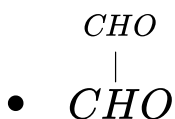




Answer: a

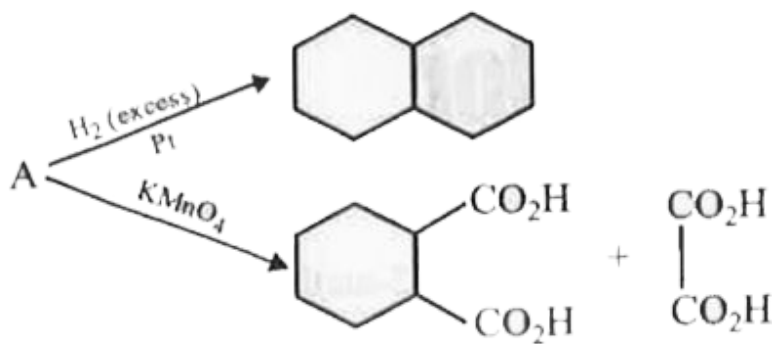
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9. 



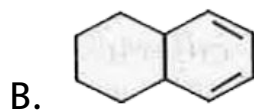
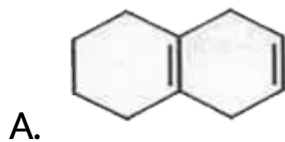
Answer: d

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10.

Compound (A) is ,





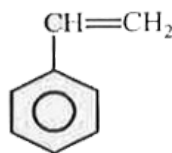
C.



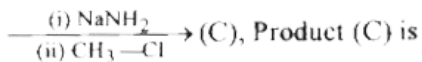
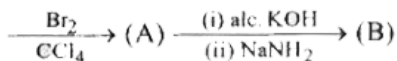
D.

Answer: b

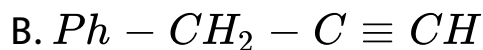
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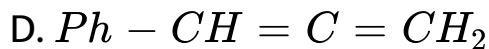
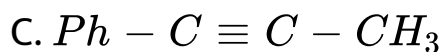
(Styrene)



11.





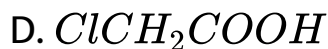
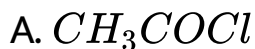


Answer: c



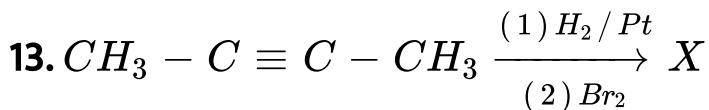
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12. What is the product formed when acetylene reacts with hypochlorous acid.



Answer: c

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- A. d-2, 3 - Dibromobutane
- B. l-2, 3 - Dibromobutane
- C. dl- 2, 3 - Dibromobutane
- D. meso-2, 3 Dibromobutane

Answer: c

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14. Which of the following statements is correct ?

A. Alkynes are more reactive than alkenes towards halogen additions

B. Alkynes are less reactive than alkenes towards halogen addition

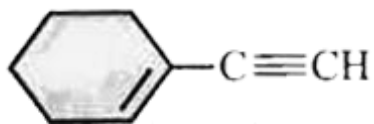
C. Both alkynes and alkenes are equally reactive towards halogen additions

D. Primary vinylic cation is more reactive than secondary vinylic cation

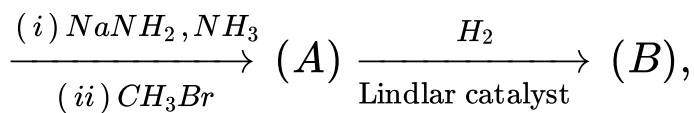
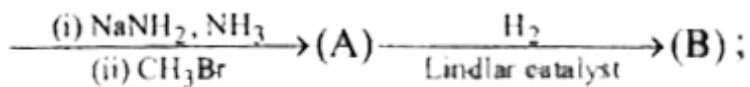
**Answer: b**



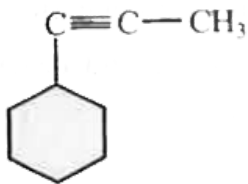
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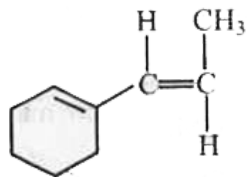
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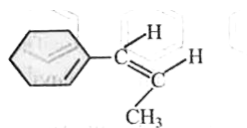
A.

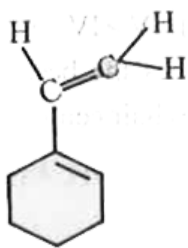


B.



C.



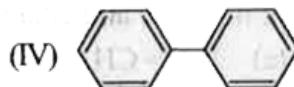
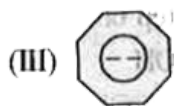
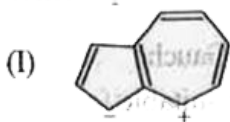


D.

Answer: c

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16. Which species are aromatic :



A. I, II and III


B. I, III and IV

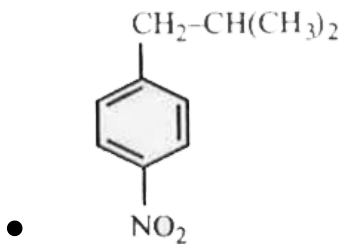
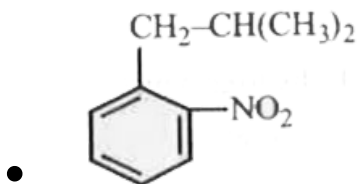
C. I and III

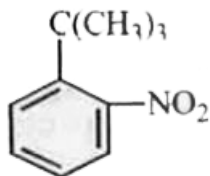
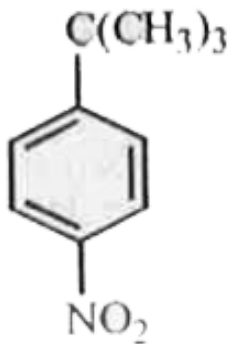
D. II and III

Answer: b

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17. Identify the end product Y 





Answer: c

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18. What happens when aniline is treated with methyl chloride in presence of  $\text{AlCl}_3$  ?

- A. It undergoes Friedel Craft reaction to form a mixture of p- methyl and o - methylaniline
- B. It does not undergo Friedel Craft reaction because  $AlCl_3$  reacts with aniline instead of reacting with alkyl halide
- C. Aniline gets positive charge and deactivated for electrophilic substitution
- D. Both (b) and (c )

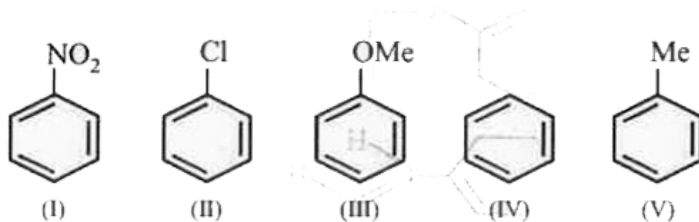
**Answer: d**



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19. Arrange the following in the order of reactivity towards an electrophilic attack



A.  $V > IV > III > II > I$

B.  $III > V > IV > II > I$

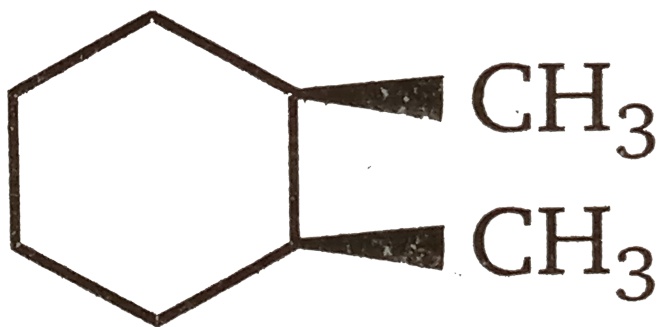
C.  $III > IV > V > II > I$

D.  $V > IV > III > I > II$

Answer: b

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20. Which of the following describes the best relationship between the methyl groups in the chair conformation of the substance shown below?



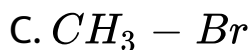
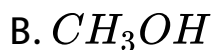
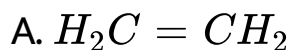
- A. Trans
- B. Anti
- C. Gauche
- D. Eclipsed

**Answer: c**



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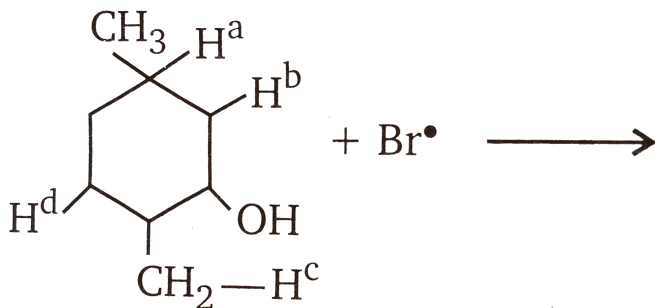
21. Which of the following reactants is suitable for preparation of methane and ethane by using one step only?



Answer: c



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$\text{Br}^*$  will abstract which of the hydrogen most readily?

A. a

B. b

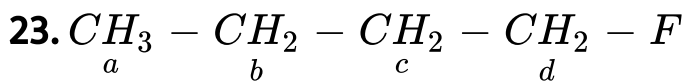
C. c

D. d

**Answer: a**



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Arrange the hydrogens a, b, c, d, in decreasing order of their reactivities towards chlorination:

A.  $a > b > c > d$

B.  $B > C > D > A$

C.  $b > c > a > d$

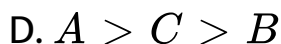
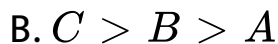
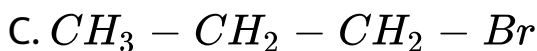
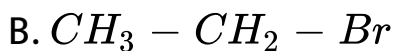
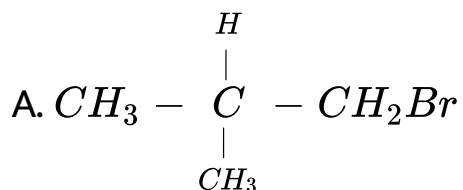
D.  $c > b > a > d$

**Answer: c**



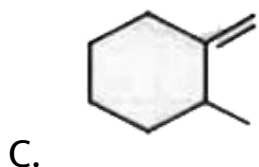
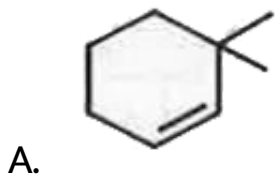
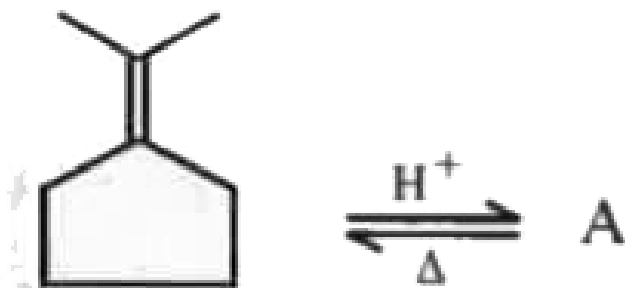
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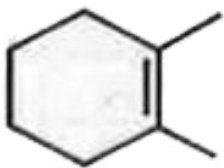
24. Arrange the following alkyl halides in decreasing order of the rate of  $\beta$ -elimination reaction with alcoholic KOH.



Answer: d

25. Predict the product (A) of the following reaction



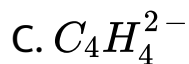
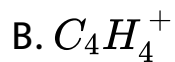
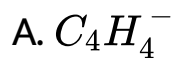


D.

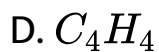
Answer: d

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26. Which of the following ring compounds obeys Huckel's rule ?







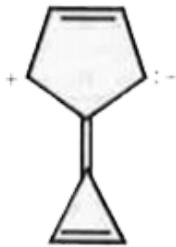
Answer: c

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27. Which of the following resonance form is most stable ?



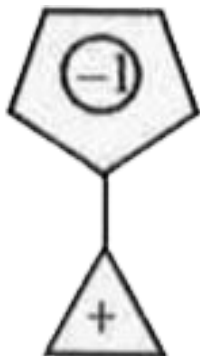
A.



B.



C.



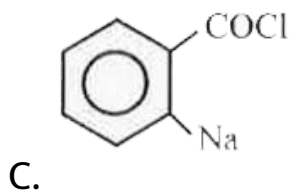
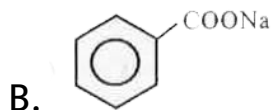
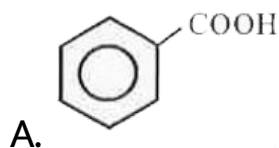
D.

Answer: d



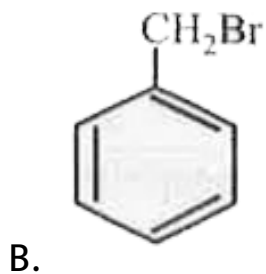
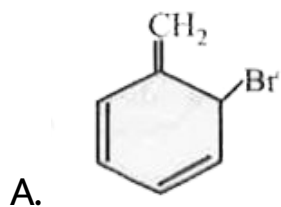
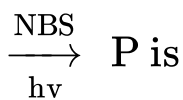
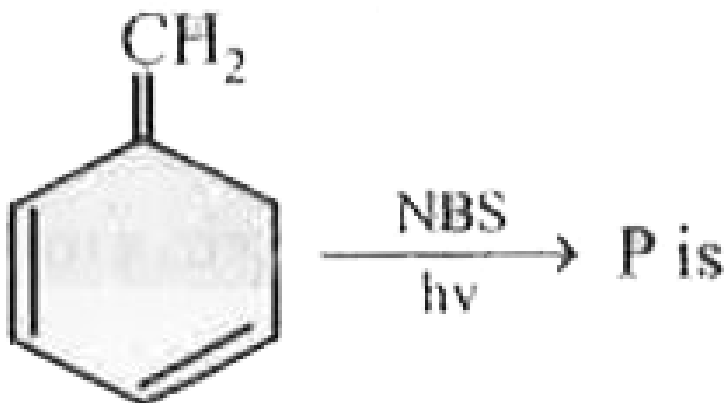
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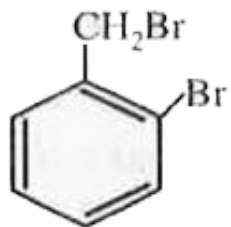
28. Toluene reacts with excess of  $Cl_2$  in presence of sunlight to give a product which on hydrolysis followed by reaction with  $NaOH$  gives .



D. None of these

**Answer: b**





C.

D. All the three

**Answer: b**



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