CHEMISTRY

BOOKS - SURA CHEMISTRY (TAMIL ENGLISH)

HYDROCARBONS

Evaluation

1. The correct statement regarding the comparison of staggered and eclipsed conformations of ethane, is

A. the eclipsed conformation of ethane is more stable than staggered conformation even though

the eclipsed conformation has torsional strain.

B. the staggered conformation of ethane is more stable than eclipsed conformation, because staggered conformation has no torsional strain.

C. the staggered conformation of ethane is less stable than eclipsed conformation, because staggered conformation has torsional strain.

D. the staggered conformation of ethane is less stable than eclipsed conformation, because staggered conformation has no torsional strain.

Answer: A::B::C::D

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2. $C_2H_5Br + 2Na \xrightarrow{\text{dry ether}} C_4H_{10} + 2NaBr$

The above reaction is an example of which of the following

A. Reimer Tiemaan reaction

B. Wurtz reaction

C. Aldol condensation

D. Hoffmann rection

Answer: A::B::C

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3. An alkyl bromide (A)reacts with sodium in ether to from $4,5$-diethyloctane,the compound (A) is

A. $CH_3(CH_2)_3Br$

B. $CH_3(CH_2)_5Br$

C. $CH_3(CH_2)_3CH(Br)CH_3$

D. $CH_3-(CH_2)_2-CH(Br)-\underset{\underset{CH_3}{|}}{C}H_2$

Answer: D

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4. The $C-H$ bond and $C-C$ bond in ethane are formed by which of the following types of overlap

A. sp^3-s and sp^2-sp^3

B. sp^2-s and sp^2-sp^2

C. $sp-sp$ and $sp-sp$

D. $p-s$ and $p-p$

Answer: A::B::C::D

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5. Which of the following is optically active ?

A. 2-methyl pentane

B. Citric acid

C. Glycerol

D. None of these

Answer: A::B

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6. The compounds formed at anode in the electrolysis of an aquous solution of potassium acetate are

A. CH_4 and H_2

B. CH_4 and CO_2

C. C_2H_6 and CO_2

D. C_2H_4 and Cl_2

Answer: c

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7. The general formula for cyclo alkanes

A. C_nH_n

B. C_nH_{2n}

C. C_nH_{n-2}

D. C_nH_{2n+2}

Answer: B

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8. The compound that will react most readily with gaseous bromine has the formula

A. C_3H_6

B. C_2H_2

C. C_4H_{10}

D. C_2H_4

Answer: A

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9. Which of the following compounds shall not produce propene by reaction with HBr followed by elemination (or) only direct elimination reaction

A. 

B. $CH_3 - CH_2 - CH_2 - OH$

C. $H_2C = C = O$

D. $CH_3 - CH_2 - CH_2Br$

Answer: B::C

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10. Which among the following alkenes on reductive ozonolysis produces only propanone ?

A. $2-$ Methyl propene

B. $2-$ Methyl but $-2-$ ene

C. 2, 3-Dimethyl but $-1-$ ene

D. 2, 3-Dimethyl but $-2-$ ene

Answer: A::B::C::D

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11. The major product formed when 2-bromo-2- methyl butane is refluxed with ethanolic KOH is

A. 2-methyl but $-2-$ ene

B. 2-methyl butan $-1-$ ol

C. 2-methyl but $-1-$ ene

D. 2-methyl butan $-2-$ ol

Answer: A

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12. Major product of the below mentioned reaction is ,

$(CH_3)_2C = CH_2 \xrightarrow{Icl}$

A. 2-chloro-1-iodo-2-methyl propane

B. 1-chloro-2-iodo-2-methylpropane

C. 1, 2-dichloro-2-methylpropane

D. 1, 2-diiodo-2-methyl propane

Answer: A::B::C::D

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13. Cis -2- butene and trans -2- butene are

A. conformatonal isomers

B. structural isomers

C. configuration isomers

D. optical isomers

Answer: A::C

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14. $\underset{Br}{\overset{|}{CH_2}} - \underset{Br}{\overset{|}{CH_2}} \xrightarrow{(A)} CH \equiv CH$, where A is ,

A. Zn

B. Cone H_2SO_4

C. alc. KOH

D. dil H_2SO_4

Answer: C

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15. Consider the nitration of benzene using mixed con H_2SO_4 and HNO_3 if a large quantity of $KHSO_4$ is added to the mixture ,the rate of nitration will be

A. unchanged

B. doubled

C. faster

D. slower

Answer: D

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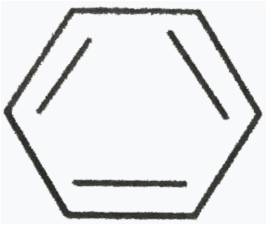
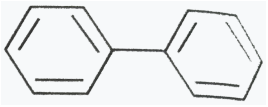
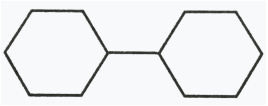
16. In which of the following molecules , all atoms are co-planar ?

A. 

B. 

C. 

D. both (a) and (b)

Answer: A::B::D

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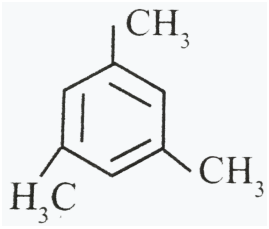
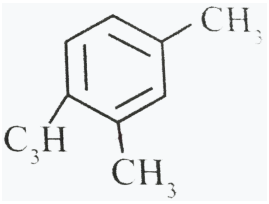
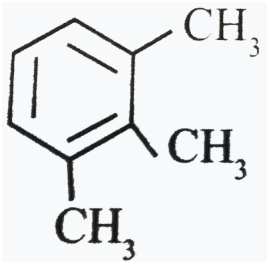
17. Propyne on passing through red hot iron tube gives

A. 

B. 

C. 

D. none of these

Answer: A

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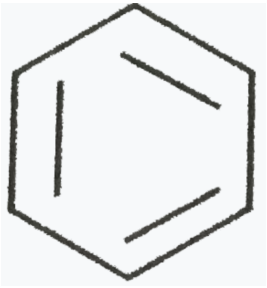
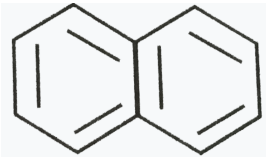
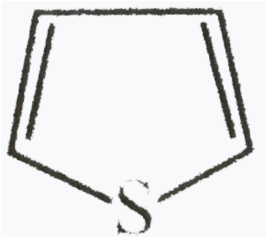
18. Which one of the following is non -aromatic ?

A. 

B. 

C. 

D.

Answer: D

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19. Which of the following compounds will not underge Friedal-craft's reaction easily ?

A. Nitro benzene

B. Toluene

C. Cumene

D. Xylene

Answer: A::B

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20. Some meta -directing substituents in aromatic substitution are given .Which one is most deactivating ?

A. $-COOH$

B. $-NO_2$

C. $-C \equiv N$

D. $-SO_3H$

Answer: B

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21. Which of the following can be used as the halide component for Friedel -Craft 's reaction ?

A. Chloro benzene

B. Bromo benzene

C. Chloro ethene

D. Isopropyl chloride

Answer: D

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22. An alkane is obtained by decarboxylation of sodium propionate .Same alkane can be prepared by

A. Catalytic hydrogenation of propene

B. action of sodium metal on iodomethane

C. reduction of 1- chloro propane

D. reduction of bromomethane

Answer: A::B::C::D

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23. Which of following is aliphatic saturated hydrocarbon

A. C_8H_{18}

B. C_9H_{18}

C. C_8H_{14}

D. All of these

Answer: A

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24. Identify the compound Z in the following reaction

$$C_2H_6O \xrightarrow[623K]{Al_2O_3} X \xrightarrow{O_3} Y \xrightarrow{Zn\,/\,H_2O} (Z)$$

A. Formaldehyde

B. Acetaldehyde

C. Formic acid

D. none of these

Answer: A::D

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25. Peroxide effect (Kharasch effect) can be studied in case of

A. oct-4-ene

B. hex-3-ene

C. pent-1-ene

D. but-2-ene

Answer: C

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26. but-2-yne on chlorination gives

A. 1-chloro butane

B. 1, 2-chloro butane

C. 1, 1, 2, 2-tetrachlorobutane

D. 2, 2, 3, 3-tetra chloro butane

Answer: D

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27. Give $IUPAC$ names for the following compounds

$$CH_3 - CH = CH - CH = CH - C \equiv C - CH_3$$

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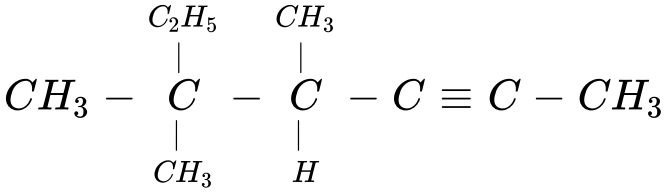
28. Give $IUPAC$ names for the following compounds



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29. Give $IUPAC$ names for the following compounds

$(CH_3)_3C - C \equiv C - CH(CH_3)_2$

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30. Give $IUPAC$ names for the following compounds

ethyl isopropyl acetylene

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31. Give $IUPAC$ names for the following compounds

$CH \equiv C - C \equiv C - C \equiv CH$

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32. Identify the compound A,B,$C$and D in the following series of reactions

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33. Write short notes on ortho, para directors in aromatic electrophillic substitution reactions.

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34. How is propyne prepared from an alkylene dihalide ?

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35. An alkylhalide with molecular formula $C_6H_{13}Br$ on dehydro halogenation gave two isomeric alkenes $X$and Y with molecular formula C_6H_{12} .On reductive

ozonolysis , $X$and Y gave four compounds CH_3COCH_3, CH_3CHO, CH_3CH_2CHO and $(CH_3)_2CHCHO$.Find the alkylhalide.

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36. Describe the mechanism of Nitration of benzene.

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37. How does Huckle rule help to decide the aromatic character of a compound ?

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38. Suggest the route for the preparation of the following from benzene .

$1)3-$ chloro nitrobenzene

$2)4-$ chlorotoluene

$3)$ Bromo benzene

$4)m-$ dinitro benzene

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39. Suggest a simple chemical test to distinguish propane and propene.

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40. What happens when isobutylene is treated with acidfied potassium permanganate?

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41. How will you convert ethyl chloride in to ethane

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42. How will you convert ethyl chloride in to $n-$ butane

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43. Describe the conformers of n-butane.

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44. Write the chemical equations for combustion of propane.

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45. Explain Markovnikoff's rule with suitable example .

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46. What happens when ethylene is passed through cold dilute alkaline potassium permanganate.

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47. Write the structures of following alkanes.

$2,3$- Dimethyl $-6-$ (2-methyl propyl) decane

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48. Write the structures of following alkanes.

5-(2-Ethyl butyl)-$3,3$-dimethyldecane

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49. Write the structures of following alkanes.

5-(1, 2-Dimethyl propyl)-2-methylnonane.

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50. How will you prepare propane from a sodium salt of fatty acid ?

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51. $CH_3 - CH(CH_3) - CH(OH) - CH_3$

$\downarrow H^+ / heat$

(A) major product $\xrightarrow{HBr}$ (B) major product

Identify A and B

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52. Complete the following :

2- butyne $\xrightarrow{\text{Lindlar Catalyst}}$

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53. Complete the following :

$CH_2 = CH_2 \xrightarrow{I_2}$

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54. Complete the following :

$$\underset{\underset{Br}{|}}{CH_2} - \underset{\underset{Br}{|}}{CH_2} \xrightarrow{Zn\,/\,C_2H_5OH}$$

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55. Complete the following :

$$CaC_2 \xrightarrow{H_2O}$$

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56. How will you distinguish 1 - butyne and 2- butyne ?

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Additional Questions

1. Benzene reacts with chlorine in presence of sun light gives a compound(A). The compound and its use are

A. C_6Cl_6, insecticide

B. $C_6H_6Cl_6$, insecticide

C. C_6H_5Cl, insecticide

D. $C_6H_6Cl_6$, sterlising agent

Answer: B::C::D

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2. The difference in potential energy between eclipsed and staggered from of ethane is .

A. $4kJ/mol$

B. $12.55kJ/mol$

C. $2kJ/mol$

D. $44kJ/mol$

Answer: A::B

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3. Eclipsed form of ethane has higher energy due to

A. Torsional strain

B. Steric strain

C. Angle strain

D. Both (a) & (b)

Answer: A

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4. The angle strain in cyclopentane is

A. 72°

B. $1^\circ 28'$

C. $44'$

D. 108°

Answer: C::D

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5. Which one is most stable ?

A. Cyclopropane

B. Cyclobutane

C. Cyclopentane

D. Cyclohexane

Answer: D

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6. $C-C-C$ bond angle in benzene is

A. 120°

B. 60°

C. 45°

D. 135°

Answer: A::B

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7. The chair form is _____ stabole than boat form by potential energy _____kJ/mol.

A. More, $44kJ/mol$

B. Less, $44kJ/mol$

C. More, $12.55kJ/mol$

D. Less, $4kJ/mol$

Answer: A::D

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8. Which one is not prepared by wurtz reaction ?

A. C_2H_6

B. nC_4H_{10}

C. CH_4

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

Answer: C

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9. In which alkane isomeraiztion will not occur ?

A. C_2H_6

B. C_4H_{10}

C. C_5H_{10}

D. C_6H_{14}

Answer: A::B::C

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10. $C_6H_5CH_2CH_2CH_3$ is when oxidised in the presence of $\cdot kMnO_4$,the product obtained is

A. C_6H_5CHO

B. C_6H_5COOH

C. $C_6H_5CH_2CH_2CHO$

D. $C_6H_5COCH_3$

Answer: B

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11. The number of axial hydrogen atoms in chair form of cyclohexane is

A. 3

B. 6

C. 12

D. 2

Answer: B

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12. $CH_3-\overset{\overset{CH_3}{|}}{C}H-CH_2-CH3\xrightarrow[UV\,\text{light}]{Cl_2}\underset{\text{Major}}{(A)}$, the compound '$A$' is

A. $CH_3-\overset{\overset{CH_3}{|}}{C}H-\underset{\underset{Cl}{|}}{CH_2}-CH_3$

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

C. $CH_3-\overset{\overset{CH_3}{|}}{C}H-CH_2-CH_2Cl$

D. $CH_3-\underset{\underset{H}{|}}{\overset{\overset{CH_2Cl}{|}}{C}}-CH_2-CH_3$

Answer: A::B::C::D

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13. Bond angle in chair from of cyclohexane is

A. $109^\circ 28'$

B. 120°

C. 60°

D. 108°

Answer: A::B

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14. In $E1$,reaction,the intermediate formed is

A. Carbanion

B. Carbocation

C. Carbon free radical

D. Carbene

Answer: A::B::C

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15. In a attempt to prepare propane by Wurtz reation 1 mole of methyl bromide and 1 mole of ethyl bromide are treated with sodium . Assuming equal probability for all possible reaction . How many 'g' of propane will be obtained ?

A. $44g$

B. $22g$

C. $33g$

D. $14.67g$

Answer: A::D

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16. Which of the following is used for the preparation of benzene ?

A. Phenol

B. Ethyne

C. Furan

D. Both (1) & (2)

Answer: A::B::D

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17. The number of π and σ-bonds in toluene is respectively

A. 3 and 6

B. 6 and 12

C. 3 and 10

D. 6 and 10

Answer: A::C::D

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18. Which of the following has maximum angle strain ?

A. 

B. 

C. 

D. 

Answer: A

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19. Total number of conformations possible in cyclohexane is

A. Zero

B. Infinite

C. Four

D. Two

Answer: B

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20. Conformation arise due to rotation around

A. Carbon-carbon double bond

B. Carbon-carbon triple bond

C. Carbon-carbon single bond

D. All of these

Answer: A::B::C::D

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21. Which of the following is the most stable cycloalkane?

A. 

B. 

C. 

D. 

Answer: A

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22. The most stable conformation of Butane is

A. Gauche-form

B. Partially eclipsed form

C. Anti-form

D. Eclipsed form

Answer: A

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23. Torsion strain is the repulsive interaction between

A. Electron cloud of two bonds

B. Electron cloud of two σ-bonds

C. Electron cloud of two π-bonds

D. Electron cloud of two σ-bonds on adjacent atoms

Answer: A::B::C::D

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24. Which form of cyclohexane is free from angle strain ?

A. Boat-form

B. Chair-form

C. Twist-form

D. All of these

Answer: A::B::C::D

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25. Which of the following conformers for ethylene glycol is most stable ?

A. 

B. 

C. 

D. 

Answer: D

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26. Select the correct statement

A. Deviation from normal tetrahedral angle in cycloalkane is called angle stain

B. Due to torsional stain eclipsed form his higher energy than the staggered form of a compound

C. Chair form of cyclohexane is the most stable conformation of cyclohexane

D. All of these

Answer: A::B::C::D

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27. In which of the following geometrical isomerism is possible ?

A. $CH_3CH = C(CH_3)_2$

B. $C_6H_5N = NC_6H_5$

C. $CH_3CH = CH_2$

D. All of these

Answer: B::C

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28. Identify the product in the following reaction

$$CH_3 - CH_2 - CH_2Br \xrightarrow[\Delta]{alc.KOH} \underset{(\text{major})}{\text{Product}}$$

A. $CH_3CH_2OH_2$

B. $CH_2 = CH_2$

C. $CH_3CH_2 - CH_2 - OH$

D. $CH_3CH = CH_2$

Answer: B::C::D

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29. How many structural isomers are possible for the molecular formula C_4H_8 which can undergo ozonolysis?

A. 2

B. 4

C. 3

D. 1

Answer: C

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30. Acetylene reacts with ammonical Cu_2Cl_2 to give precipitate of

A. Red colour

B. Yellow colour

C. White colour

D. Blue colour

Answer: A

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31. Carbon - carbon bond lengh in benzene is

A. $1.39A$

B. $1.09A$

C. $1.54A$

D. $1.34A$

Answer: A::C

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32. The reasonance energy of benzene is

A. $209kJ/mol$

B. $360kJ/mol$

C. $151kJ/mol$

D. $109kJ/mol$

Answer: A::C

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33. The bond length between central carbon atom and other carbon atom is minimun in

A. Propene

B. Propyne

C. Propane

D. Pentane

Answer: B

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34. Which of the following is the most reactive towards electrophilic substitution reaction ?

A. 

B. 

C. 

D. 

Answer: D

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35. How many stereoisomers does the molecules have ?

$CH_3CH = CHCH_2CHBrCH_3$

A. 2

B. 4

C. 6

D. 8

Answer: B::D

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36. The order of decreasing reactivity towards an electophilic reagent, for the following would be

(a) Benzene (b) Toluene

(c) Chlorobenzene (d) Phenol

A. $d > b > a > c$

B. $a > b > c > d$

C. $b > b > a > c$

D. $d > c > b > a$

Answer: A::B::C

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37. Which is maximum stable ?

A. But 1- ene

B. cis-but-2-ene

C. trans-but-2-ene

D. All have equal

Answer: A::B::C

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38. Geometrical isomers differ in

A. Position of functional group

B. Position of atoms

C. patial arrangement of atoms

D. Length of carbon chain

Answer: A::C

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39. The correct order of reactivity towards the electophilic substitution of the compounds aniline (I), benzene (II) and nitrobenzene (III) is

A. $III > II > I$

B. $II > III > I$

C. $I < II > III$

D. $I > I > III$

Answer: D

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40. The cylindrical shape of alkyne is due to

A. Two sigma $C - C$ and one $\pi C - C$ bonds

B. One sigma $C - C$ and two $\pi C - C$ bonds

C. Three sigma $C - C$ bonds

D. Three π $C - C$ bonds

Answer: A::B::C::D

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41. In the commercial gasonlines , the type of hydrocarbons which are more desirable is

A. Linear unsaturated hydrocarbon

B. Toluene

C. Branched hydrocarbon

D. Straight-chain hydrocarbon

Answer: A::B::C::D

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42. The most stable conformation of n-butane is

A. Gauche

B. Staggered

C. Skew boat

D. Eclipsed

Answer: A::B::D

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43. Which one of these is not compatible with arenes ?

A. Electrophilic

B. Delocalisation of π-electrons

C. Greater stability

D. Resonance

Answer: A::C

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44. 2- butene shows geometrical isomerism due to

A. Restricted rotation about double bond

B. Free rotation about double bond

C. Free rotation about single bond

D. Chiral carbon

Answer: A::B::C::D

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45. Which one is not aromatic compound ?

A. 

B. 

C. 

D. 

Answer: D

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46. The incorrect match is

A. 

B. 

C. 

D. 

Answer: D

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47. Which of the following is incorrect ?

A. When a mixture of sodium salt of carboxylic acid and soda lime is heated, alkane is formed

B. The alkane formed has one carbon atom more than carboxylic acid.

C. This process of eliminating carboxylic group is known as decarboxylation.

D. All the above are incorrect.

Answer: A::B::C::D

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48. Which of the following is incorrect ?

A. Hyper conjugation effect is also observed when atoms/groups having lone pair of electrons are attached by a single bond and in conjugation with a n-bond.

B. The lone pair of electrons enters into resonance and displaces n-electrons resulting in more than one structure.

C. When electronegative atoms or group of atoms are in conjugation with a n-bond, they pull-electrons from the multiple bond.

D. All the above are correct.

Answer: A::B::C::D

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49. Assertion (A) : paraffin is the older name for the alkane group family of compounds .

Reason (R) : This name comes from the Latin which means 'little activity'.

A. Both (A) and (R) are true and (R) is the correct explanation of (A).

B. Both (A) and (R) are true and (R) is not the correct explanation of (A).

C. (A) true but (R) false

D. Both (A) and (R) are false.

Answer: A::B::C::D

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50. Assertion (A) : Stream reforming process is a well established industrial process is a well etablished industrial process for the production of $H2$ gas from hydrocarbons .

Reason (R) : Production of the gas from methane is known as steam reforming process .

A. Both (A) and (R) are true .

B. (A) true but (R) false

C. (A) false but (R) true

D. Both (A) and (R) are false.

Answer: A::B::D

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51. Which of the following is incorrect ?

A. Hyper conjugation effect is also observed when atoms/groups having lone pair of electrons are attached by a single bond and in conjugation with a n-bond.

B. The lone pair of electrons enters into resonance and displaces n-electrons resulting in more than one structure.

C. When electronegative atoms or group of atoms are in conjugation with a n-bond, they pull- electrons from the multiple bond.

D. All the above are correct.

Answer: A::B::C::D

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Short Answers Questions

1. Write the combustion of n-hexane with equation .

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2. Draw the staggered and eclipsed conformers of n-butane .

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3. Write Friedel -Craft's reation .

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4. Define benzenoid and non -benzenoid compounds with example .

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5. What are activating and deactivating groups ?

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6. How are branched alkanes formed from normal alkanes ?

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7. Show the classification of hydrocarbons.

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8. Identify A,$B$and C from the following equation

$$\underset{(A)}{C_4H_6} \xrightarrow{Pd-CaCO_3} (B)$$
$$\downarrow Na/NH_3$$
$$(C)$$

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9. Identify $A$and B from the following .

$$C_2H_6O \xrightarrow[430-440K]{\text{con.}H_2SO_4} A \xrightarrow[NI,298K]{H_2} B$$

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10. Define conformation .

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11. Write a brief account on addition of HBr to symmetrical alkene.

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12. What is peroxide effect? Give example .

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13. Peroxide effects is observed only in HBr and not in HCl or Hl.Justify.

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14. How does ozone react with ethene and prop-1-ene?

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15. List out the uses of alkenes .

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16. Prove -All the six hydrogens in benzens are identical

.

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17. Why straight chain structure of benzene is not possible?

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18. Confirm the presence of three $C = C$ in benzene

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19. Write a short note on resonance in benzene .

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20. Why ,benzene undergoes substitution reaction more readily than addition reaction ?

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21. Convert bromobenzene to toluene and name the process .

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22. What happens when water is treated with ethyne and propyne?

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23. How does the ozone gets add on to the $C \equiv C$?

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24. Write an account on the following reactions involving formation of alkane.

Kolbe's Electrolytic method.

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25. Write an account on the following reactions involving formation of alkane.

Wurtz reaction

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26. Write an account on the following reactions involving formation of alkane.

Corey-House Mechanism

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27. What happens when alkane is ,

(i) burnt in air

(ii) aromatized

(iii) reacted with steam?

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28. Write a short note on the following .

Aromatisation

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29. Write a short note on the following .

Pyrolysis

Watch Video Solution

30. List out the uses of alkanes .

Watch Video Solution

31. Explain the isomerism exhibited by alkenes.

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32. Write a note on the following reactions.

Dehydration of ethanol

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33. Write a note on the following reactions.

Electrolysis of potassium succinate

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34. Write a note on the following reactions.

Chlorination of ethene

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35. Write a brief note on polymerisation of alkenes.

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36. How many types of polymerisation are possible in alkynes ?

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37. State Huckel's rule of aromaticity and explain it interms of cyclopentediene, cycloxtateraene and cyclopropenylcation.

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38. Explain the molecular orbital structure of benzene .

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39. Predict the product for the following .

(i) Benzene $+H_2 \rightarrow$?

(ii) Benzene $+Cl_2 \rightarrow$?

(iii) Benzene $\_ O_2$?

(iv) Benzene $+CH_3Cl \rightarrow$?

$(v) C_6H_5COONa + NaOH \rightarrow$?

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40. Polycylic aromatic hydrocarbons are carcinogenic - explain.

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41. Among anthracene and cyclopentadiene which is aromatic ? Give reason for your anwer .

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42. Write the structural formula , bond line formula common and $IUPAC$ name of C_5H_{12}.

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Long Answers Questions

1. Explain various methods of preparation of alkane.

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2. Discuss in detail about the conformations exhibited by ethane.

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3. Eludicate the differences in relative stability of conformations.

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4. Discuss in detail about the general methods of preparation of alkenes.

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5. Elucidate the structure of benzene in detail.

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6. Explain in detail about the addition of hydrogen halide to an unsymmetrical alkene.

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7. How are alkynes prepared from the following?

(i) Alkenes (ii) Gem dihalides

(iii) Potassium maleate (iv) Calcium carbide

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8. Write only the equations representing the electrophilic substitution in benzene.

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9. Explain the industrial and laboratory preparation of benzene and toluene.

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10. Complete the following reactions.

$(i) CH_3 - CH_2C \equiv CH + Cu_2Cl_2$ (ii)

$CH_3 - C \equiv C - CH_3 + AgNO_3$

$(iii) CH \equiv CH + H_2$

$(iv) CH_3 - C \equiv CH + Br$

$(v) CH \equiv C - CH_2 - CH_3 + HBr$

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Creative Questions Hots

1. Which salt of carboxylic acid will be required to prepared ethane by sodalime decarboxylation ? Give

equation for the reation?

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2. Sodium salt of which acid is required for the preparation of butane? Write chemical equation for the reaction.

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3. What will be the product formed in the following reaction?

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4. How can propane be oxidised to propionic acid?

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In Text Question Evaluate Yourself

1. Write the structural formula and carbon skeleton formula for all possible chain isomers of C_6H_{14} (Hexane)

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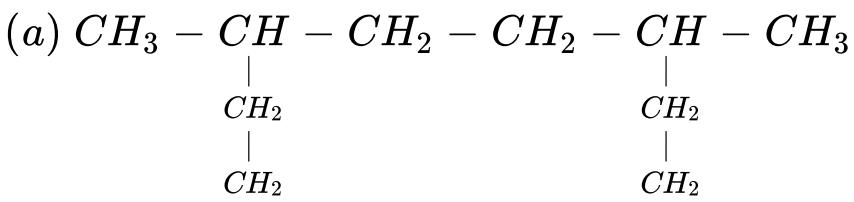
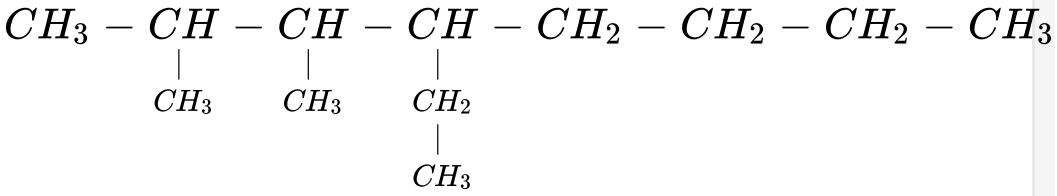
2. Give the IUPAC name for the following alkane.

(a) 

(b)



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3. Draw the structural formula for $4, 5$-diethyl,$3, 4, 5$ trimethyl octane.

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4. Is it possible to prepare methane by Kolbe's electrolytic bond.

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5. Write down the combustion reactions of propane Whose $\Delta H^{\circ} = -2220K$

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6. Why ethane is produced in chlorination of methane?

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7. How toluene can be prepared by this method?

(i) From n-heptane

(ii) From $2-$ methyl hexane

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8. Write the IUPAC names for the following alkenes

$(i) H_2C - \underset{\underset{CH_3}{|}}{C}\ H - CH = CH - CH_3$

$(ii) CH_3 - \underset{\underset{CH_2}{|}}{\underset{\underset{CH_2}{|}}{C}} = CH - CH_2 - CH_2 - CH_3$

(iii) 

(iv) 

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9. Draw the structure for the following alkenes.

$(i) 6-$ Bromo-2, 3-dimethyl-2-hexene

$(ii) 5-$ Bromo -4-Chloro-1-heptene

$(iii) 2,$ 5-methyl -4.Octene

$(iv) 4$- methyl-2 Pentene

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10. Draw the structure and write down the IUPAC name for the isomerism exhibited by the molecular formulae.

$(i) C_5H_{12}$-Pentane (3isomers)

$(ii) C_6H_{14}$-Hexane(5isomers)

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11. Determine whether each of the following alkenes can exist as cis-trans isomers?

(a)1-Chloropropene (b) $-$ 2 Chloropropene

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12. Draw cis-trans isomers for the following compound.

(a)2-chloro-2 butene

$(b)CH_3 - \mathrm{CC}l = CH - CH_2CH_3$

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13. How propene is prepared from $1,2$-dichloropropane?

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14. How Ozone reacts with 2- methyl propene?

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15. An organic compound (A) on Ozonolysis gives only acetaldehyde (A) reacts with Br_2/CCl_4 to give compound (B) identify the compounds (A) and (B).

Write the IUPAC name of (A) and (B) given the geometrical isomers of (A)

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16. An organic compound (A) C_2H_4 decolourises bromine water, (A) on reaction with chlorine given B. A reacts with HBr to given (C). Identify (A), (B) , (C) Explain the reaction.

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17. Prepare propyne from its corresponding alkene.

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18. Write the products A & B for the following reaction.

$$Cl - CH_2 - CH_2 - Cl \xrightarrow[-HCl]{KOH} A \xrightarrow[-HCl]{KOH} B$$

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19. $CH \equiv C - CH_3 + H_2 \xrightarrow{pt} ? \xrightarrow{H_2} ?$

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20. Calculate the number of rings present in $C_{18}H_{12}$.

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21. Write all possible isomers for an aromatic benzenoid compound having the molecular formula C_8H_{10}.

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22. Write all possible isomers for a mono substituted aromate bemenoid compound having the molecular formula C_9H_{12}.

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23. How benzene can be prepared by Grignard reagent?

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24. Why benzene undergoes electrophillic substitution reaction where as alpenses undergoes addition reaction?

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25. Convert ethyne to benzene and name the process.

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26. Toluene undergoes nitration easily than Benzene why?

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