



CHEMISTRY

BOOKS - S DINESH & CO CHEMISTRY (HINGLISH)

HYDROCARBONS

Assorted

1. Acetaldehyde is the rearrangement product of

- A. Methyl alcohol
- B. Allyl alcohol
- C. Vinyl alcohol
- D. Ethyl alcohol

Answer: C

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MCQ

1. The bond order of individual carbon-carbon bond in benzene is

- A. One
- B. Two
- C. Between one and two
- D. One and two alternately.

Answer: C

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Others

1. Which of the following is not a petroleum product?

A. Gasoline

B. Cooking gas

C. Bees wax

D. All are petroleum products

Answer: C



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2. Which of the following can be obtained from naphth?

A. Parffin wax

B. Napthalene

C. Petroleum ether

D. All

Answer: C



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3. The principle constituents of petroleum are

A. phenols

B. alcohols

C. hydrocarbons

D. unsaturated hydrocarbons only

Answer: C



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4. Kerosene oil is composed of hydrocarbons containing carbon atoms

A. $C_1 - C_4$

B. $C_4 - C_8$

C. $C_9 - C_{13}$

D. $C_{11} - C_{16}$

Answer: D

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5. Branching of hydrocarbon chains results in

A. increase in oxidation number

B. decrease in octane number

C. decrease in isomer number

D. increase in octane number

Answer: D

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6. Which of the following has highest octane number?

A. 2,2,4-Trimethylpentane

B. 2,2,3-Trimethylpentane

C. Neopentane

D. Isohexane.

Answer: B



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7. Anti knocking character of gasoline can be improved by the addition of

A. lead sulphhate

B. lead bromide

C. tetraethyl lead

D. diethyl cadium

Answer: C

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8. The substance which has been assigned octane number of -45 is

A. n-octane

B. n-heptane

C. n-nonane

D. none of these

Answer: C

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9. "Octane number" means:

- A. Percentage is iso-octane in petrol
- B. Percentage of iso-octane in a mixture of n-heptane and iso-octane which matches given fuel in knocking
- C. Mixture of n-octane and n-heptane which matches the given fuel in combustion characteristics
- D. none of these

Answer: B



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10. A knocking sound is produced in the internal combustion engine when the fuel

- A. burns slowly
- B. burns fast
- C. contains some water

D. is contaminated with lubricating oil.

Answer: B



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11. The minimum temperature at which an oil gives off enough vapours to give momentary flash of light, when tiny flame is brought near its surface is called the

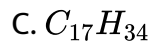
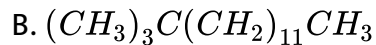
- A. Flash point
- B. Octane number
- C. Centane number
- D. Kindling point

Answer: A



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12. The formula of Cetane is

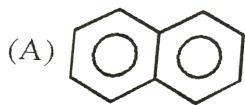


D. none of these

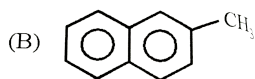
Answer: A

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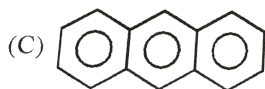
13. Which of the represents α - methyl naphthalene?



A.

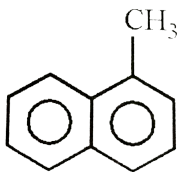


B.



C.

(D)
D.



Answer: D

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14. Which of the following constitutes basic components of coal tar?

- A. Xylene
- B. Pyridine
- C. Cresol
- D. None

Answer: B

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15. Which of the following is the main component of heavy oil fraction of coal tar?

A. Naphthol and cresol

B. Phenol

C. Toulence

D. β -Naphthylamine.

Answer: A



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16. During the fractional distillation of coal tar the fractrion obtained at 530K is

A. light oil

B. anthracene oil

C. heavy oil

D. middle oil

Answer: C



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17. The approximate of benzene in 90%

A. 0.4

B. 0.7

C. 0.65

D. 0.5

Answer: B



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18. Fischer Tropsch process, the catalyst used is

A. Co

B. Mo

C. Cu

D. Fe_2O_3

Answer: A



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19. Which has maximum carbon content?

A. Bituminous

B. Anthracite

C. Peat

D. Lignite.

Answer: B



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20. The name AK-33-X is used for

- A. A gun
- B. An antiknock compound
- C. Explosive
- D. Fertilizer.

Answer: B

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21. Abel's apparatus is used for determination of

- A. Flash point
- B. Ignition temperature
- C. Boiling point

D. Freezing point.

Answer: A

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22. The main constituent of CNG

A. Methane

B. Ethane

C. Propane

D. Ethyne.

Answer: A

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23. Crude oil rich in cycloalkanes is called

- A. Olefinic
- B. Paraffinic
- C. Asphaltic
- D. none of these

Answer: C

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24. In a mixture is isooctane and n-heptane, the percentage of n-heptane is 15, the octane number of the fuel is

- A. 15
- B. 85
- C. 95
- D. 100

Answer: B



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25. The raw material used in Fischer Tropsch process for synthetic petroleum is

- A. Water gas
- B. Water gas+Excess of hydrogen
- C. Producer gas
- D. Coal gas

Answer: B



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26. Petrochemicals are obtained from

- A. Coal

B. Petroleum

C. Coal-tar

D. All of these

Answer: B

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27. Centane number of diesek fuel will increase with the addition of

A. n-Decane

B. n-Hexadecane

C. n-Hexane

D. α -Methylnaphalene.

Answer: B

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28. When petroleum is heated gradually, the first batch of vapours will be rich in

- A. Kerosene
- B. Petroleum ether
- C. Diesel
- D. Lubricating oil.

Answer: B



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29. LPG contains

- A. Methane
- B. Ethane
- C. Butane

D. none of these

Answer: C

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30. Petrol for aviation purpose must contain

- A. Straight chain hydrocarbon
- B. Aromatic hydrocarbons
- C. Olefinic hydrocarbons
- D. Highly branched chain paraffins.

Answer: D

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31. Soda lime specific reagent for

- A. Dehalogenation
- B. Decarboxylation
- C. Dehydration
- D. Dehydrogenation

Answer: B

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32. The compound X produces methane when treated with water. The compound X is

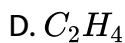
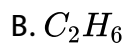
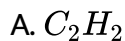
- A. Calcium carbonate
- B. Beryllium carbide
- C. Calcium phosphide
- D. Aluminium nitride

Answer: B



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33. One of the following cannot be prepared by Kolbe's electrolytic process?



Answer: C



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34. Which of the following hydrocarbon is formed when electricity discharge is passed between graphite electrodes in an atmosphere of hydrogen?

A. CH_4

B. C_2H_6

C. C_2H_4

D. C_2H_2

Answer: D

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35. Buty-2-yne is formed by reaction of

A. CH_3Br with sodium acetylide

B. CH_3I with disodium acetylide

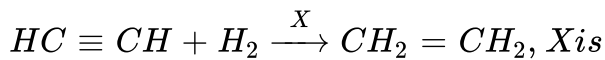
C. CH_3I with acetylene

D. CH_4 with chloroacetylene.

Answer: B

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36. In the reaction



- A. P-2 catalyst
- B. Adam's catalyst
- C. Raney Nickel
- D. Pd deposited over $BaSO_4$

Answer: A

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37. Indicate the expected structure of the organic product when ethyl magnesium bromide is treated with heavy water (D_2O)

- A. $C_2H_5 - C_2H_5$

B. C_2H_5OD

C. Sodium benzoate

D. C_2H_5D

Answer: D

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38. Which of the following on treatment with Zn/Cu couple produces propane?

A. Propanal

B. Isopropyl bromine

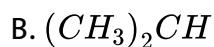
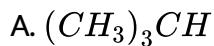
C. Isopropyl amine

D. Isopropyl alcohol

Answer: B

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39. Which of the following alkane contains pri, sec, tert as well as quaternary C atoms?



Answer: C



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40. Electrolytic decarboxylation of sodium propionate produces?

A. Propane

B. ethane

C. methane

D. butane

Answer: D

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41. The compound which produces propane on heating with HI in presence of phosphorus is

A. $CH_3CH_2CH_2I$

B. CH_3CH_2CHO

C. $CH_3CH_2CH_2OH$

D. All of these

Answer: D

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42. Which of the following will not produce ethane?

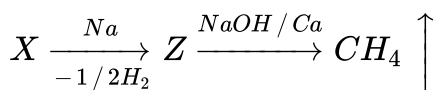
- A. Reducing of CH_3COOH with HI / P_4
- B. Reducing of CH_3COOH_3 with HI / P_4
- C. Soda lime decarboxylation of sodium propionate
- D. Hydrogenation of ethane in the presence of Ni.

Answer: B



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43. What is X in the following sequence of reaction?



- A. Methane
- B. ethanoic acid
- C. propane

D. none of these

Answer: B

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44. Which reaction will not yield alkane?

A. Reduction of acetone with Mg/H_2O

B. Hydrogenation of ethene

C. Treatment of ethanol with methyl magnesium bromide

D. Soda lime decarboxylation of sodium propionate

Answer: A

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45. The reagent used to convert a carboxyl group ($-COOH$) into $-CH_3$ group is

A. $LiAlH_4$

B. Na and alcohol

C. Red P and HI

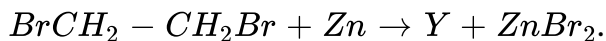
D. $Zn + HCl$

Answer: C



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46. In reaction



Y is

A. Ethyne

B. Ethene

C. Ethane

D. None

Answer: B

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47. Reaction of alkanes with halogen is explosive in case of

A. F_2

B. Cl_2

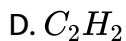
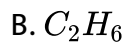
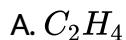
C. Br_2

D. I_2

Answer: A

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48. Which of the following is used for artificial ripening of fruits?

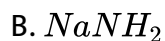


Answer: A

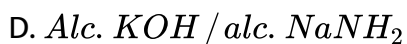
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49. The reagent required to convert 1,2-dichloropropane to propyne is

A. Zinc dust



C. Ag powder

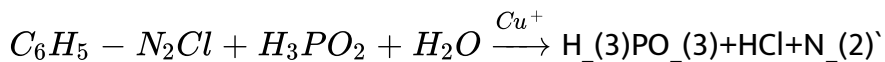


Answer: D



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50. The product formed in the reaction is



A. Phenol

B. Toulence

C. Benzene

D. Aniline

Answer: C



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51. Solid methane is

A. A molecular solid

B. An ionic acid

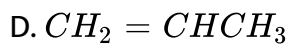
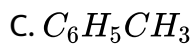
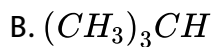
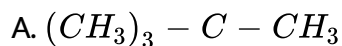
C. A covalent solid

D. Amorphous

Answer: A

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52. The slowest of abstraction of hydrogen atoms by a chlorine atoms is shown by



Answer: A



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53. An alkane by molecular weight 72 upon chlorination gives one monochlorination product. The alkane is

- A. 2-Methylbutane
- B. n-Pentane
- C. 2,2-Dimethylpropane
- D. All of these

Answer: C



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54. The major product obtained when isobutane is treated with chlorine in the presence of diffused sun light is

- A. isobutylchloride

B. n-Butylchloride

C. tert-Butylchloride

D. sec-Butylchloride

Answer: C

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55. Which of the following alkanes can be easily sulphonated?

A. n-Butane

B. Isobutane

C. n-Pentane

D. n-Heptane

Answer: D

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56. Cyclohexane when treated with Br_2 in CCl_4 gives

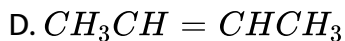
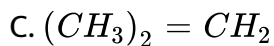
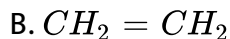
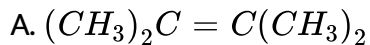
- A. Bromocyclohexane
- B. trans-1,2-Dibromocyclohexane
- C. cis-1,2-Dibromocyclohexane
- D. none of these

Answer: B



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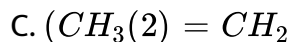
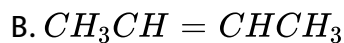
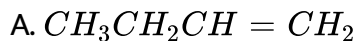
57. The most reactive alkene HBr among the following is



Answer: A

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58. Alkene which upon acidic hydration produces ter butyl alcohol is



Answer: C

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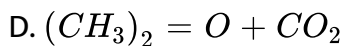
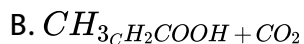
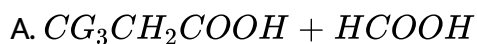
59. Addition of HBr to 2-methyl-1-propene in the presence of hydrogen peroxide mainly forms

- A. 1-Bromobutane
- B. 2-Bromopropane
- C. 2-Bromo-2-methylpropane
- D. 1-Bromo-2-methylpropane

Answer: D

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60. Oxidations of 1-butene with hot $KMnO_4$ solution produces.



Answer: B

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61. Both electrophilic and nucleophilic addition reaction are given by

- A. Alkanes
- B. Alkynes
- C. Alkenes
- D. Carbonyl compounds

Answer: B



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62. When but-1-yne is treated with excess of HBr the expected product is

- A. 1,2-Dibromobutane
- B. 2,3-Dibromobutane
- C. 1,1-Dibromobutane

D. All of these

Answer: B

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63. But-1-yne can be converted into 1-bromo-1-butene by reacting it with which of the following reagent?

A. HBr

B. HBr and $C_6H_5COO_2$

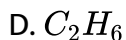
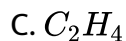
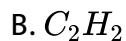
C. Br_2 and H_2O_2

D. Br_2 and CCl_4

Answer: B

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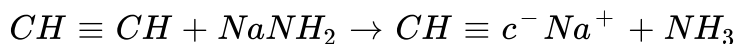
64. The hydrocarbon which gives benzene on passing through a red hot iron tube is



Answer: B

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65. The reaction



shows that the hydrogen atoms of terminal acetylene are

A. Acidic

B. Basic

C. Neutral

D. Amphoteric

Answer: A

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66. The treatment of RMgBr with $R'C = CH$ produces

A. RH

B. R'H

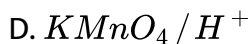
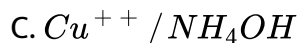
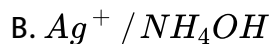
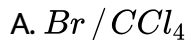
C. R-R

D. R-R'

Answer: A

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67. Which of the following reagents will quantitatively distinguish between 1-butyne and 2-butyne?



Answer: B



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68. Which isomer of C_5H_{12} give four isomers of monoiodopentane?

A. Neopentane

B. n-Pentane

C. Isopentane

D. none of these

Answer: C

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69. Which of the following hydrocarbon is liquid at room temperature?

A. Ethane

B. Propane

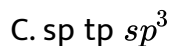
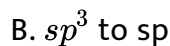
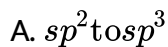
C. Hexane

D. Butane

Answer: C

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70. Ethane is subjected to combustion process. The hybrid state of carbon during the combustion changes from



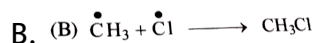
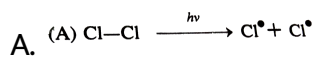
D. unpredictable

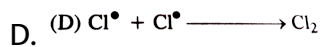
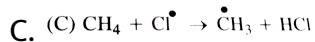
Answer: B



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71. During chlorination of methane to methyl chloride, the propagation step is represented by





Answer: C

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72. Which of the following is not an oxidation product of alkane?

A. Alcohol

B. Aldehyde

C. Carboxylic acid

D. Ether

Answer: D

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73. Iodination of an alkane is carried out in presence of

- A. Alcohol
- B. HNO_3 or HIO_3
- C. Any reducing agent
- D. Benzene

Answer: B



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74. Which of the following decolourises $KMnO_4$ solution?

- A. CCl_4
- B. CH_4
- C. C_2H_6
- D. $(CH_3)_3CH$

Answer: D

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75. In order to get propane gas, which of the following should be subjected to sodalime decarboxylation?

- A. Sodium butyrate
- B. Sodium propionate
- C. Mixtures of sodium acetate and sodiummethanoate
- D. Sodium formate

Answer: B

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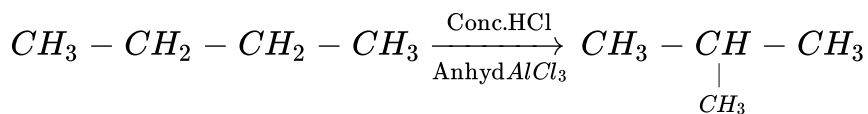
76. Domestic cooking gas consists of mostly

- A. Methane and ethane
- B. Liquefied butane and isobutane
- C. Ethylene and carbon monoxide
- D. Acetylene and hydrogen

Answer: A

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77. The reaction



is an example of

- A. Isomerisation
- B. Polymerization
- C. Cracking
- D. Dehydrogenation

Answer: A

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78. Which alkane (molecular mass 72) would yield three different monochloro derivatives?

- A. n-Pentane
- B. Isopentane
- C. n-Hexane
- D. Isohexane.

Answer: C

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79. The final product of complete oxidation of hydrocarbons is

- A. an acid
- B. an aldehyde
- C. $H_2O + CO_2$
- D. an alcohol

Answer: B

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80. Ethene gas is bubbled through the water saturated with chlorine.

The major product formed will be

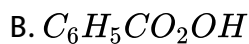
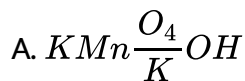
- A. Ethanol chloride
- B. Ethylene chlorohydrin
- C. Ethylene chloride
- D. Ethylene glycol.

Answer: B



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81. Which of the following reagents cannot be used for the oxidation of propane?



C. Fehling solution

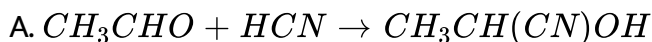
D. Ozone.

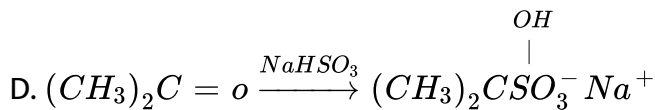
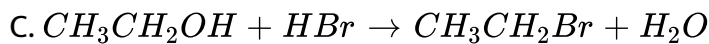
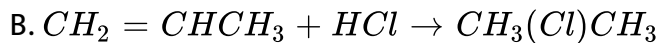
Answer: C



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82. Which of the following is not an addition reaction?

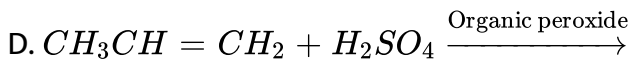
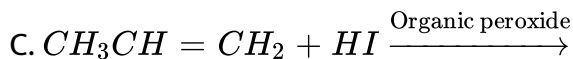
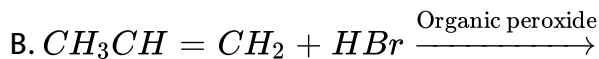
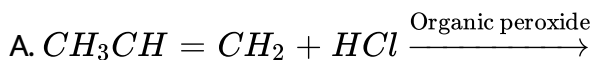




Answer: B

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83. In which of the following reactions Markownikov's rule is not observed

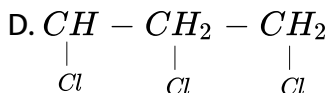
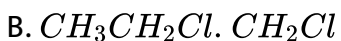


Answer: A



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84. Which of the following will be the main product for the chlorination of propylene at 750K?

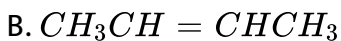
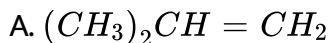


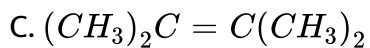
Answer: C



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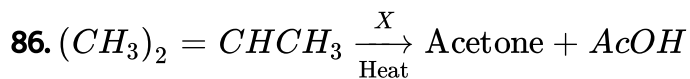
85. Which of the following alkenes is most stable?



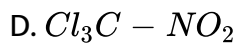
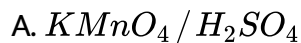


Answer: A

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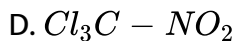
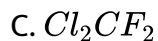
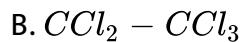
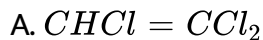
In the above reaction X is



Answer: A

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87. Westrosol has the following formula



Answer: A



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88. Ethylene combines with sulphur monochloride to form.

A. mustard gas

B. saccharine

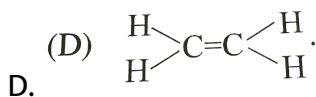
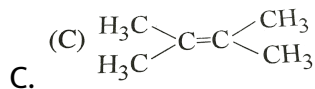
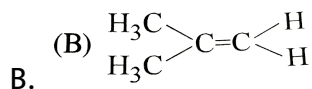
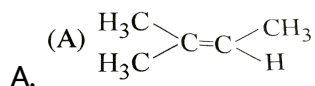
C. lewsite

D. none of these

Answer: C

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89. The least reactive alkene towards hydrogenation is



Answer: C

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90. Ethyne + $X \xrightarrow{\text{Ba}^{2+}}$ Prop-2-ene-nitrile. Here X can be

- A. Bromine
- B. Barium cyanide
- C. Hydrogen bromide
- D. Hydrogen cyanide

Answer: B

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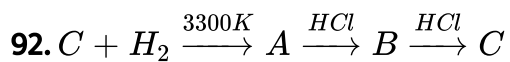
91. Which of the following alkynes will not be able to show acidic character?

- A. 1-Butyne
- B. 2-Butyne
- C. Propyne
- D. Ethyne.

Answer: B



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In the above sequence C is

- A. Ethylene chloride
- B. Ethylidene chloride
- C. Ethyl chloride
- D. Carbon tetrachloride.

Answer: B



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93. Which of the following reagents give lewisite?

- A. C_2H_4 and S

B. C_2H_2 and $AsCl_3$

C. C_2H_2 and HCN

D. The name is simply associated with one of the theories of acids-bases

Answer: B

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94. A mixture of C_2H_6 , C_2H_4 and C_2H_2 is bubbled through alkaline solution of copper (I) chloride, contained in Woulf's bottle. The gas coming out is:

A. original mixtures

B. C_2H_6

C. C_2H_6 and C_2H_4 mixture

D. C_2H_4 and C_2H_2

Answer: C

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95. Which of the following hydrocarbon is obtained by electrolysis of sodium fumerate?

A. Ethane

B. Ethyne

C. methane

D. Ethene

Answer: B

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96. A metallic carbide on treatment with water gives a colourless gas which burns readily in air and gives a precipitate with ammonical silver

nitrate. The gas is

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

Answer: C



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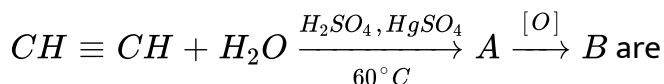
97. Acetylene is used in the large scale production of

- A. Polythene
- B. Vinyl chloride
- C. Ethyl alcohol
- D. Benzene

Answer: B

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98. The compounds A and B in the sequence



- A. acetone and acetic acid respectively
- B. acetaldehyde and acetic acid respectively
- C. acetaldehyde and ethyl alcohol respectively
- D. ethyl alcohol and acetaldehyde respectively

Answer: B

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99. The reagent(s) required to convert 1-butyl to 2-butanone is (are)

A. dilute H_2SO_4

B. $ZnCl_4 + HCl$

C. $Hg^{2+} + H_2SO_4$ (dilute)

D. Alk. $KMnO_4$

Answer: C

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100. Which is the weakest acid among the following?

A. HCl

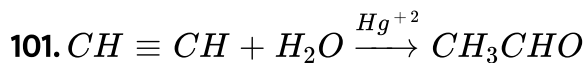
B. Acetylene

C. Phenol

D. Picric acid

Answer: B

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The reaction is known as

- A. Blace reaction
- B. Kucherov's reaction
- C. Etard's reaction
- D. Deil's Alder reaction

Answer: B

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102. Acetylene reacts with nitrogen in the presence of electric spark to produce

- A. Ammonia

B. Pyrrole

C. Hydrocyanic acid

D. Pyridine.

Answer: C



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103. Propyne on passing through red hot copper tube forms

A. Benzene

B. Toluene

C. Mesitylene

D. None

Answer: C



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104. When $CH_3[CH_2]_3C = CH$ is oxidised with hot alkaline $KMnO_4$ the product is

- A. $CH_3CH_2CH_2COOH$
- B. CH_3CH_2COOH
- C. $CH_3CH_2CH_2COOH \& CO_2$
- D. $CH_3CH_2CH_2CH_2COOH \& CO_2$

Answer: D



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105. When but-2-yne is ozonised the product is

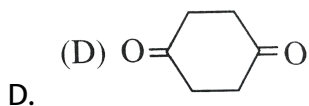
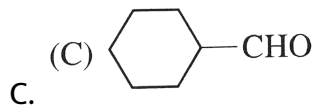
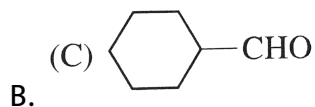
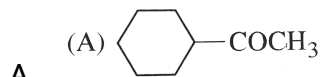
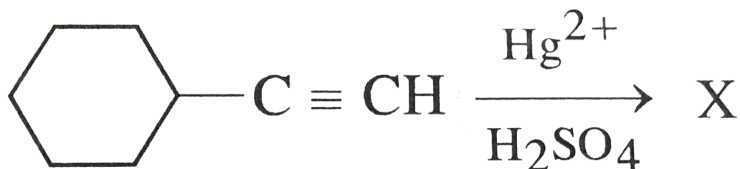
- A. Glyoxal
- B. Methyl glyoxal
- C. Dimethyl glyoxal

D. Acetone

Answer: C

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106. What is X in the following reaction?

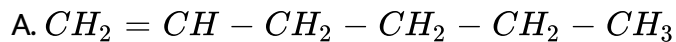


Answer: A

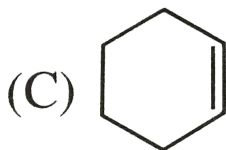
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107. An alkene upon ozonolysis yield

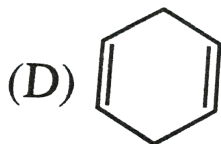
$CHO - CH_2 - CH_2 - CH_2 - CHO$ only. The alkene is



B.



C.



D.

Answer: B

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108. 2-Methylbut-1-ene reacts with mercuric acetate in presence of water to form a product, which on reduction with NaBH_4 yields

- A. 2-Methylbutane-2-ol
- B. 2-Methylbutane-1-ol
- C. 3-Methylbutane-2-ol
- D. none of these

Answer: A



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109. Which of the following decolourise bromine water as well as Baeyer's reagent?

- A. Propane
- B. Cyclopropane

C. Propyne

D. Benzene

Answer: C

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110. Amongst the following, moderately activating groups is

A. $-NHR$

B. $-NHCOCH_3$

C. $-OH$

D. $-CH_3$

Answer: B

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111. Which of the following on treatment with super heated steam under pressure gives benzene?

A. Benzene sulphonic acid

B. Benzyl chloride

C. Bromobenzen

D. Nitro benzene

Answer: A



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112. F.C. reaction of benzene with isobutyl chloride produces

A. isobutylbenze

B. tert-Butylbenzene

C. n-Butylbenzene

D. sec-Butylbenzene

Answer: B

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113. Which of the following on treatment with hot alkaline $KMnO_4$ gives benzoic acid?

A. Toluence

B. Ethylbenzene

C. Isopropyl benzene

D. All of these

Answer: D

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114. Which one of the following compounds will undergo meta substitution (mainly) on monochlorination?

A. Ethoxybenzene

B. Chlorobenzene

C. Ethyl benzene

D. Phenol.

Answer: C



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115. The hydrocarbon which decolorizes alkaline $KMnO_4$ solution but does not give any precipitate with ammoniacal silver nitrate solution is

A. Benzene

B. Acetylene

C. Propyne

D. Butyne-1

Answer: A

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116. Benzene on treatment with a mixture of conc. HNO_3 and con. H_2SO_4 at 373K gives

A. Nitrobenzene

B. m-Dinitrobenzene

C. p-Dinitrobenzene

D. n-Dinitrobenzene

Answer: B

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117. The function of anhydrous BF_3 in the Friedel-Crafts reaction is

- A. to absorb water
- B. to absorb HCl
- C. to produce electrophile
- D. to produce nucleophilic

Answer: C

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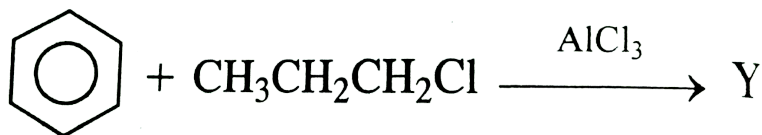
118. Which of the following is most sensitive towards electrophilic substitution?

- A. $C_6H_5NO_2$
- B. C_6H_5Cl
- C. $C_6H_5CH_3$

D. C_6H_5OH

Answer: D

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The major product Y is

- A. Cumene
- B. n-Propyl benzene
- C. Ethyl benzene
- D. Toluence and C_2H_5Cl .

Answer: A

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120. Reductive ozonolysis of o-xylene gives

- A. Glyoxal
- B. Methyl glyoxal
- C. Dimethyl glyoxal
- D. All of these

Answer: D

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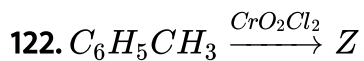
121. Benzene reacts with CH_3COCl in the presence of anhydrous $AlCl_3$ to give

- A. Toluence
- B. Acetophenone
- C. Phenyl chloride

D. Benzoyl chloride

Answer: B

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In the given sequence Z is

A. Benzaldehyde

B. Toluic acid

C. Phenyl acetic acid

D. Benzoic acid

Answer: A

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123. The oxidation of benzene by V_2O_5 in the presence of air produces

- A. Malic acid
- B. Maleic acid
- C. Maleic anhydride
- D. none of these

Answer: C

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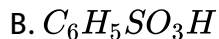
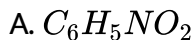
124. Toluene reacts with chromyl chloride to form :

- A. Benzaldehyde
- B. Benzoic acid
- C. Chlorobenzene
- D. none of these

Answer: A

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125. To a mixture of fuming HNO_3 and conc. H_2SO_4 . Benzene was added. This mixture was heated for long time at $100^\circ C$. The main product is



C. 1,3,5 -Trinitrobenzene

D. m-Dinitrobenzene

Answer: C

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126. $CH_3C_6H_5 \xrightarrow[H_2SO_4]{K_2Cr_2O_7} Y$. Here Y is

A. Benzaldehyde

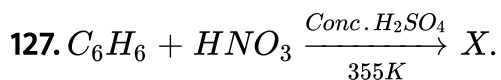
B. Toluene

C. Benzoic acid

D. Ethylbenzene

Answer: C

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In the given reaction X is

A. Benzene sulphonic acid

B. Maleic anhydride

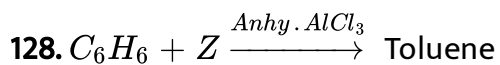
C. Nitrobenzene

D. Aminobenzene

Answer: C



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The compound Z is

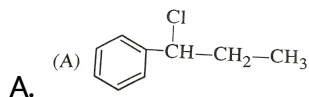
- A. Acetic acid
- B. Acetic anhydride
- C. Acetone
- D. Chloromethane.

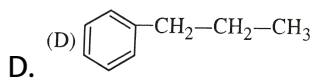
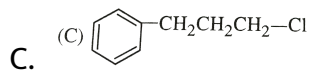
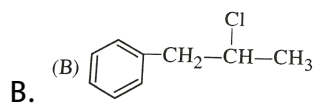
Answer: D



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129. Propyl benzene with Cl_2 in presence of light gives





Answer: A

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130. Which of the following is a naphatene?

A. Benzene

B. n-Hexane

C. Cyclohexane

D. Naphthlene.

Answer: C

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131. When ethene is allowed to react with diazomethane in presence of UV light, the product formed is

- A. Cyclopropane
- B. Cyclobutane
- C. Butane
- D. Methylcyclopropane

Answer: A

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132. The percentage of 1-bromo-2-methyl propane obtained in the photochlorination of isobutane is about

- A. 0.46

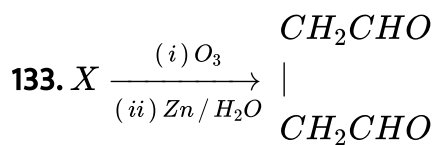
B. 0.64

C. 0.56

D. 0.01

Answer: D

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A. Propyne

B. 1-Butyne

C. Cyclopropene

D. Cyclobutene

Answer: D

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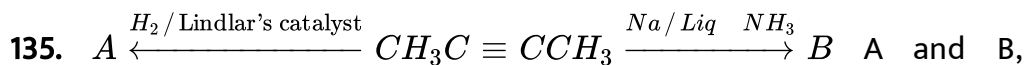


A and B respectively are:

- A. alc. KOH and $NaNH_2$
- B. $NaNH_2$ and alc. KOH
- C. $NaNH_2$ and Lindlar's catalyst
- D. Lindlar's catalyst and $NaNH_2$

Answer: A

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respectively, are

- A. A is cis while B is trans-2-butene

B. A is trans while B is cis-2-butene

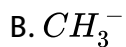
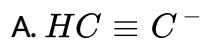
C. A and B both are trans-2-butene

D. A and B both are cis-2-butene

Answer: A

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136. Which of the following is weakest base?



Answer: D

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137. A gas produced by dropping water on calcium carbide is bubbled through dil. H_2SO_4 in presence of $HgSO_4$. Which of the above reagents can convert the product of the above reaction into gem. Ethylene dichloride.

A. Cl_2

B. HCl

C. PCl_5

D. $SOCl_2$ / pyridine

Answer: C



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138. Acrylonitrile is given by reagents

A. Acrylic acid and HCN

B. Ethyne and HCN

C. Ethyne and HCN / Ba^{2+}

D. Ethane and HOCl

Answer: C

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139. Hydroboration of 2-butyne followed by treatment with AcOH

A. n-Butane

B. 1-Butyne

C. trans-2-Butene

D. cis-2-butene

Answer: D

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140. Which of the following is ketones cannot be formed by hydration of a suitable alkyne?

- A. Propanone
- B. Buta-2-one
- C. Pentan-2-one
- D. Benzophenome.

Answer: D



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141. A compound A with molecular formula C_6H_{10} on oxidation with hot $KMnO_4$ gives hexandioic acid. A is

- A. 2-Hexyne
- B. 1,5-Hexadiene

C. 1, 3 – *Hexadiene*

D. Cyclohexane

Answer: D

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142. The Kolbe's electrolysis proceeds via

A. Nucleophilic substitution mechanism

B. Electrophilic addition mechanism

C. Free radical mechanism

D. Electrophilic substitution reaction.

Answer: C

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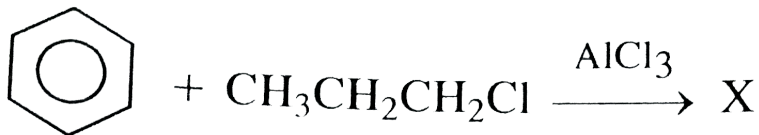
143. The treatment of CH_3OH with CH_3MgI releases 1.04 mL of a gas at STP. The mass of CH_3OH added is

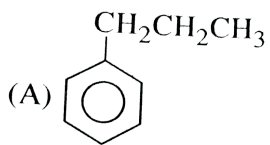
- A. 1.49 mg
- B. 2.98 mg
- C. 3.71 mg
- D. 4.47 mg

Answer: A

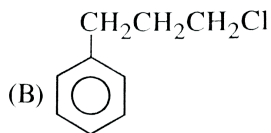
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144. The structure of compound X in the following reaction is

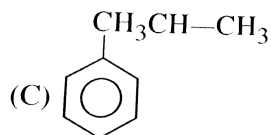




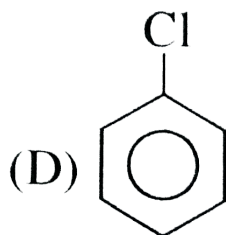
A.



B.



C.



D.

Answer: C

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145. The product obtained on heating n-heptane with Cr_2O_3 , Al_2O_3 at $3600^\circ C$ is

A. Cycloheptane

B. Methylcyclohexane

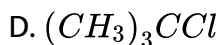
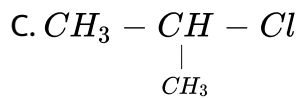
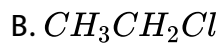
C. Benzene

D. Toluene

Answer: D

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146. Each of the following alkyl halide reacts with sodium metal in presence of ether to form alkane except



Answer: D

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147. Formation of butane by the action of zinc on ethyl bromide is known as

- A. Wurtz reaction
- B. Sebatier-Sendern's reaction
- C. Frankland reaction
- D. Wolff-Kishner reduction

Answer: C

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148. The o,p-directing but deactivating group is

A. $-NH_2$

B. $-OH$

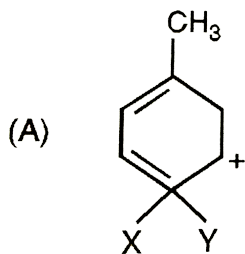
C. R-(alkyl)

D. X-(halogen)

Answer: D

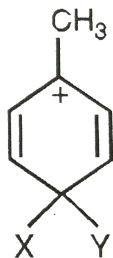
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149. Which of the following carbocations is expected to be most stable



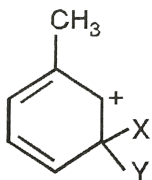
A.

(B)



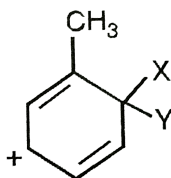
B.

(C)



C.

(D)



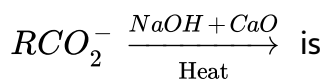
D.

Answer: B



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150. The function of CaO in the reaction



A. that of a catalyst

B. that of a dehydration agent

C. that of a drying agent

D. that of a nucleophilic agent.

Answer: C

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151. Cyclohexene on ozonolysis yields

A. CH_3CH_2CHO (2 moles)

B. $CH_3 - \overset{C}{\parallel} O - CH_3$ (2 moles)

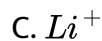
C. $CH_3CH_2CHO + CH_3 - \overset{C}{\parallel} O - CH_3$

D. $OHC - [CH_2]_4 - CHO$

Answer: D

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152. Hydration of acetylene to ethanal is catalysed by



D. None

Answer: A



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153. The most reactive hydrocarbon is

A. Ethene

B. Ethyne

C. Ethane

D. Methane

Answer: A

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

A. $KMnO_4$ (alkaline)

B. Osmium tetroxide

C. B_2H_6 and alk. H_2O_2 (hydroboration oxidation)

D. O_3 / Zn dust

Answer: C

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155. Alkenes containing terminal double bond can be reduced by sodium in liquid ammonia in the presence of an alcohol. This reduction is known as

- A. Mendius reduction
- B. Birch reduction
- C. Stephen's reduction
- D. Clemensen's reduction

Answer: B



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156. Benzene on ozolysis yields.

- A. Glyoxal
- B. Acetone
- C. Ethanol

D. Methanol

Answer: A

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157. If n is the number of carbon atoms in the potassium salt of a carboxylic acid, then the alkene formed on electrolysis of aqueous solution of a salt of a carboxylic acid containing n carbon atoms would have carbon atoms equal to

A. n

B. $n-1$

C. $2n-1$

D. $2(n-1)$

Answer: D

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158. An alkene is formed from a carbocation by

- A. Elimination of H^+ ion
- B. Elimination of H^- ion
- C. Addition of H^- ion
- D. Addition of H^+ ion.

Answer: A



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159. Abstraction of a sec H-atom propane gives a _____ radical

- A. n-Propyl
- B. Isopropyl
- C. Ethyl

D. none of these

Answer: B

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160. In which of the following hydrocarbons would give a red precipitate on treatment with ammoniacal cuprous chloride

A. 2-Butene

B. 2-Butyne

C. 1,3-Butadiene

D. 1-Butyne

Answer: D

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161. During distillation of coal tar. Anthracene is mainly present

- A. light oil
- B. Heavy oil
- C. Middle oil
- D. Green oil

Answer: D



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162. Gasoline contains hydrocarbons in the range

- A. C-7 to C-12
- B. C-12 to C-15
- C. C-4 to C-6
- D. C-5 to C-8

Answer: A

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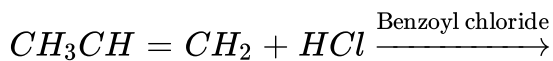
163. The homolytic fission of hydrocarbons in the range

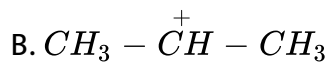
- A. Free radicals
- B. Carbocations
- C. Carbanions
- D. Carbenes

Answer: A

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164. The structure of the intermeidate of the following reaction is





Answer: B

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165. Which of the following product is formed when acetylene is passed into a solution of cuprous chloride in ammonium chloride?

A. Vinyl acetylene

B. Benzene

C. Cyclooctatetraene

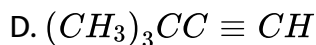
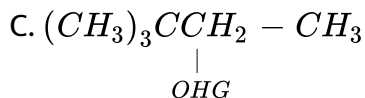
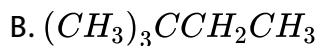
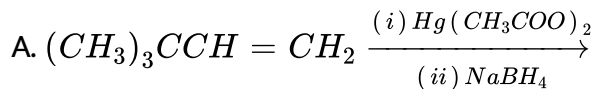
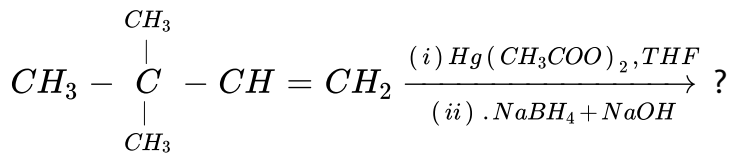
D. Toulene

Answer: A



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166. The product of following reaction



Answer: B



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167. In an industrial process, coke is heated with quicklime in an electric furnace and the cooled product is then treated with water to produce

A. Acetylene

B. Etylene

C. Ethane

D. Methane

Answer: A



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168. What is formed when calcium carbide reacts with heavy water?

A. C_2D_2

B. CaD_2

C. CaD_2O

D. CD_2

Answer: A



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169. Which one of the following heptanols can be dehydrated to hept-3-ene only?

- A. Heptan-3-ol
- B. Heptan-4-ol
- C. Heptan-2-ol
- D. Heptan-1-ol

Answer: B



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170. Cyclohexene reacts with Br_2 in CCl_4 to form

- A. cis-1,2-Dibromocyclohexane
- B. trans-1,2-Dibromocyclohexane

C. Bromocyclohexane

D. None

Answer: B

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171. Which of the following reagent cannot be used to distinguish between propane and propene?

A. Conc. H_2SO_4

B. Bromine water

C. Beayer reagent

D. Tollen's reagent

Answer: D

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172. A concentrated solution of sodium butyrate is electrolysed in suitable apparatus. The product at the anode is

- A. Butane
- B. Propane
- C. Hexane
- D. Pentane

Answer: C



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173. Cyclohexane reacts with cold dilute alkaline $KMnO_4$ yield

- A. ci-1,2-Cyclohexanediol
- B. trans-1,2-Cyclohexanediol
- C. Cyclohexanediol

D. Hexanedial.

Answer: A

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174. When but-1-yne is treated with excess of HBr the expected product is

A. 1,2-Dibromobutane

B. 2,2-Dibromobutane

C. 1,1-Dibromobutane

D. All of these

Answer: B

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175. Which of the following reagents will react with n-butane?

- A. Alkaline potassium permanganate
- B. Bromine in the presence of sunlight
- C. Chloroine in dark
- D. Cold conc. Nitric acid

Answer: B

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176. A hydrocarbon has the molecular formula C_3H_4 . To find out whether it contains two double bonds or a triple bond. Which of the following test should be performed.

- A. Treat with bromine in CCl_4
- B. Pass through ammonical cuprous chloride

C. Treat with Baeyer's reagent

D. Treat with Fehling solution.

Answer: B

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177. Ethyl magnesium iodide reacts with propylamine to give

A. Propane

B. Ethyl alcohol

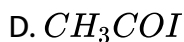
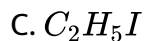
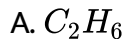
C. Ethane

D. Ethene

Answer: C

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178. Which of the following compounds is formed when acetic acid is heated with HI in presence of red phosphorous at 423K?



Answer: A



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179. Ethylidene chloride is formed by treating acetylene with:



D. Cl_2 in presence of organic peroxide

Answer: A

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180. Ethylene can be prepared by the electrolysis aqueous solution of:

- A. sodium acetate
- B. sodium succinate
- C. Sodium benzoate
- D. sodium fumarate.

Answer: B

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181. $R - C = C - R$ reacts with

A. Ammoniacal $AgNO_3$

B. Ammonical Cu_2Cl

C. $NaNH_2$

D. None

Answer: D



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

A. ethyl bromide and n-butyl chloride

B. methyl bromide and n-pentyl bromide

C. n-propyl chloride

D. ethyl bromide and n-butyl bromide

Answer: C



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183. Dehydrohalogenation of alkyl halides lead to the formation of highly alkyl alkene. This generalization is called.

- A. Hoffmann's rule
- B. Markownikov's rule
- C. Zaitsev's rule
- D. none of these

Answer: C



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184. Which of the following fraction obtained from coal tar yields anthracene and phenanthrene?

- A. light oil

B. Middle oil

C. heavy oil

D. Anthracene oil

Answer: B

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185. Benzene can be converted to BHC when:

A. chlorine is bubbled through benzene

B. benzene and chlorine mixture is kept in dark

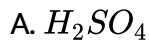
C. chlorine is shaken with benzene

D. chlorine and benzene is exposed to light

Answer: D

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186. Alkenes can be freed from alkene impurities by treating with concentrated solution of the



Answer: A



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187. Bayer's reagent oxidises acetylene to:

A. Acetic acid

B. glyoxal

C. formic acid

D. fumaric acid

Answer: B

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188. Ozonolysis is carried out

- A. to detect the presence of functional group
- B. to locate the position of double bond
- C. to detect the presence of double bond
- D. to detect the presence of triple bond

Answer: B

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189. Ethylene glycol is prepared from ethylene by:

- A. Hydrogen peroxide
- B. Osmium tetroxide
- C. Ozone
- D. Hydrogen and oxygen

Answer: B

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190. Acetylene is liberated by the electrolysis of an aqueous solution of:

- A. sodium acetate
- B. sodium succinate
- C. Sodium benzoate
- D. sodium fumarate.

Answer: D

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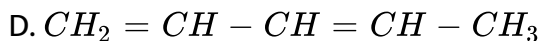
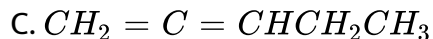
191. Which of the following dienes will give Diels Alder reactions?

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192. Which of the following dienes is the most stable?

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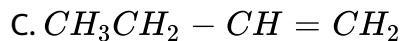
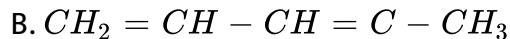
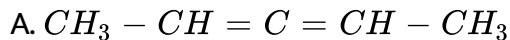
193. Which of the following diene will give formaldehyde, glyoxal and acetaldehyde on ozonolysis?



Answer: D

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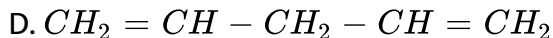
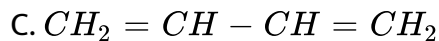
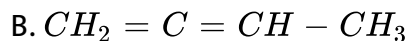
194. Out of the following which pentadiens shows double bond character between $C_2 - C(3)$ bond although it appears to be a single bond



Answer: B

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195. Which of the following dienes has lowest heat of hydrogenation?

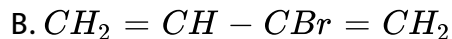
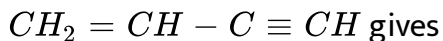


Answer: C



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196. The reaction of one equivalent of HBr with



Answer: B



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197. Addition of one mol of Br_2 to 1,3-butadiene at room temperature gives

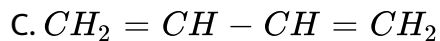
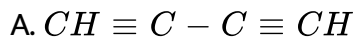
- A. 1,2-Dibromo but-3-ene
- B. 1,3-Dibromo but-2-ene
- C. 2,3-Dibromo but-3-ene
- D. 1,4-Dibromo but-2-ene

Answer: D



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198. Which of the following unsaturated hydrocarbons gives chloroprene (a monomer for neoprene) when treated with HCl in the presence of CuCl



Answer: B



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199. Addition of one mol of Br_2 to which of the following hydrocarbons gives two positional dibromo isomers

A. Cyclopentene

B. 1,3-Pentadiene

C. 1,4-Pentadiene

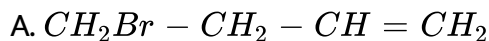
D. 2,3-Pentadiene.

Answer: B



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200. Which product is obtained as a major product when one mol of HBr is added to one mol of 1,3-butadiene at 193K?



Answer: B



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201. Which of the following state is/are correct?

- A. Addition of HBr to conjugated pentadiene occurs at a faster rate than isolated pentadiene
- B. Addition of Br_2 to ethyne occurs at a slower rate than addition of ethene
- C. Addition of one mol of HBr to 1,3-butadiene at room temperature gives 1,4-dibromo but 2-ene as the major product
- D. All the above statements are correct.

Answer: D

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202. Ethylbenzene with bromine in the presence of $FeBr_3$ predominantly gives

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203. Pentene-1 with HCl gives

- A. 1-chloropentane
- B. 2-chloropentane
- C. 3-chloropentane
- D. no reaction

Answer: B

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204. The most reactive among the following towards sulphonation is

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205. A hydrocarbon with formula C_8H_{18} gives one monochloro derivative. The hydrocarbon can be:

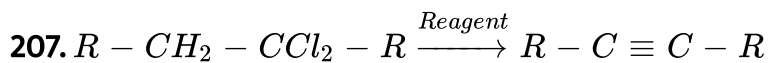


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206. The most stable free radical among the following is



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The reagent is

A. Na

B. HCl / H_2O

C. KOH in C_2H_2OH

D. Zn/Alcohol

Answer: C



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208. Toluene on oxidation with dilute HNO_3 gives

- A. Benzaldehyde
- B. Phenol
- C. Nitrotoluence
- D. Benzoic acid

Answer: D

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209. The function of anhydrous $AlCl_3$ in friedel-Crafts' reaction is to

- A. to absorb water
- B. to absorb HCl
- C. to produce attacking electrophile
- D. to produce nucleophilic

Answer: C

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210. What is the end product of nitration of toluene?

A. o-Nitrotoluence

B. p-Nitrotoluence

C. 2,4,6-Trinitrotoluence

D. 2,4-Dinitrolene.

Answer: C

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211. Gammexane is

A. D.D.T.

B. Benzene hexachloride

C. Chloral

D. Hexachloroethane.

Answer: B

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212. The most common reaction of benzene is

A. Electrophilic addition reactions

B. Electrophilic substitution reactions

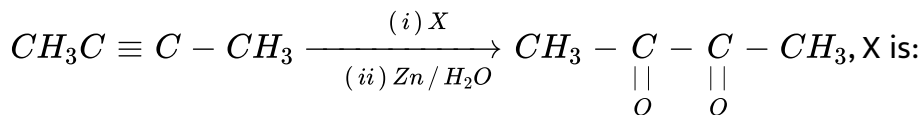
C. Nucleophilic addition reactions.

D. Nucleophilic substitution reactions.

Answer: B

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213. In the reaction,



A. HNO_3

B. O_2

C. O_3

D. $KMnO_4$

Answer: C

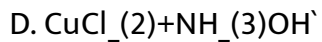
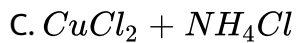


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214. Catalyst used in the dimerization of acetylene to prepare chloroprene is

A. $HgSO_4 + H_2SO_4$

B. $CuCl_2$



Answer: C

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215. Chloroprene is used in making

A. Synthetic rubber

B. Plastic

C. Petrol

D. All.

Answer: A

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216. Acetylene gives

- A. White ppt. with ammonical $AgNO_3$ and red ppt. with ammonical $Cu(NO_3)_2$
- B. White ppt. with ammonical $AgNO_3$ and red ppt. with ammonical $CuCl_2$
- C. White ppt. with both
- D. Red ppt. with both

Answer: B

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217. A hydrocarbon reacts with hypochlorous acid to give 2-chloroethanol. The hydrocarbon is

- A. Ethylene

B. Methane

C.

D.

Answer: A

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218. Reaction of alkenes with halogens is explosive in the case of

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219. The presence of unsaturation in organic compounds can be tested with

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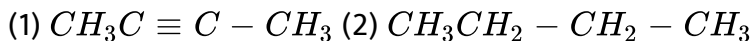
220. Acetylene when treated with dilute HCl at $60^{\circ}C(333K)$ in presence of $HgCl_2$ produces-

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221. Indicate the organic structure for the product expected when 2-methylpropene is heated with acetyl chloride in the presence of anhydrous $ZnCl_2$.

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222. Which is the most suitable reagent among the following distinguish compound (3) from the others?



A. Bromine in carbon tetrachloride

B. Bromine in acetic acid solution

C. Alk. MnO_4

D. Ammonical silver nitrate

Answer: D

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223. Benzene does not undergo addition reaction easily because

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224. Adding Cl_2 to benzene in the presence of anhydrous $AlCl_3$ is an example of

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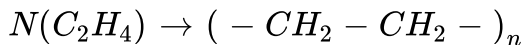
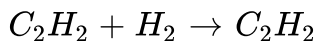
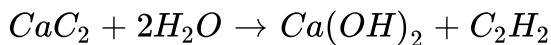
225. When ethylbromide and propyl bromide are allowed to react with sodium in ether, they form

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226. Benzene adds on ozone to form a

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227. Formation of polyethylene from calcium carbide takes place as follows



The amount of polyethylene obtained from 64.1 kg CaC_2 is

A. 7kg

B. 14kg

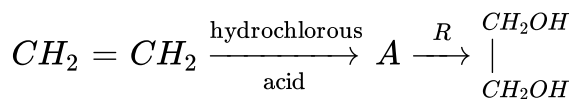
C. 21kg

D. 28kg

Answer: D

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228. In the reaction sequence

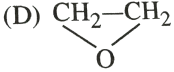


A and *R* are respectively

A. CH_3CH_2Cl and $NaOH$

B. CH_2ClCH_2OH and *aq.* $NaHCO_3$

C. CH_3CH_2OH and HCl

D.  and heat

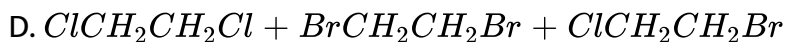
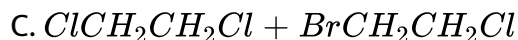
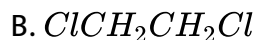
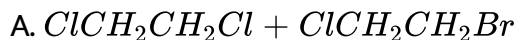
Answer: B

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229. $HC \equiv CH$ reacts with acetic acid in the presence of Hg^{2g+} ions to give

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230. The product formed by the action of chlorine on ethene in saturated solution of KBr is/are

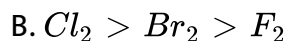
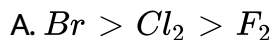


Answer: C



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231. What is the reactivity order of halogens towards substitution in alkanes?



Answer: C



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232. A gas which reacts with aqueous $KMnO_4$ solution but does not give precipitates with ammonical Cu_2Cl_2 solution is



B. Methane

C. Ethane

D. Acetylene

Answer: A

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233. Which of the following statements is not compatible with arenes?

A. Greater stability

B. Resonance

C. Electrophilic addition

D. Delocalisation of π -electrons.

Answer: C

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234. Which of the following substances is used as an antiknock compound?

- A. Tetraethyl lead
- B. Lead tetrachloride
- C. Lead acetate
- D. Ethyl acetate.

Answer: A



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235. Which of the following has highest chlorine content?

- A. Pyrene
- B. DDT
- C. Chloral

D. Gammmaxane

Answer: A

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236. In Wurtz reaction the reagent used is

A. Na

B. Na/liq. NH_3

C. Na/dry ether

D. Na/dry. Alcohol

Answer: C

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237. An unknown compound (A) has a molecular formula C_4H_6 . When (A) is treated with excess of Br_2 a new substance (B) with formula $C_4H_6Br_4$ is formed. (A) forms a white ppt. with ammoniacal silver nitrate solution. (A) may be,

A. But-1-yne

B. But-2-yne

C. But-1-ene

D. But-2-yne

Answer: A



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238. Addition of HI on the double bond of propene yields isopropyl iodide and not n-propyl iodide as the major product. This is because the addition proceeds through:

- A. More stable carbocation
- B. More stable carbanion
- C. More stable free radical
- D. Homolysis

Answer: A

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239. The function of $ZnCl_2$ in Friedel Craft's reaction is

- A. to absorb water
- B. to absorb HCl
- C. to produce electrophile
- D. to produce nucleophilic

Answer: C

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240. In methyl alcohol solution, bromine reacts with ethylene (ethene) to yield $BrCH_2CH_2OCH_3$ in addition to 1,2-dibromoethane because

- A. the intermediate carbocation may react with Br^- or CH_3OH
- B. the methyl alcohol solvolates the bromide
- C. the reaction follows Markownikov's rule
- D. this is a free radical mechanism

Answer: A



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241. Which reaction sequence would be best to prepare 3-chloro-aniline from benzene

- A. Chlorination, nitration, reduction

B. Nitration, chlorination, reduction

C. Nitration, reduction, chlorination

D. Nitration, reduction, Acetylation, chlorination, hydrolysis

Answer: B



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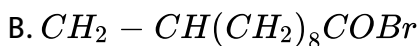
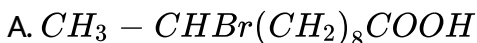
242. What is the electrophile in the nitration of benzene

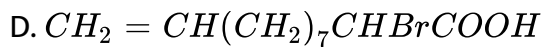
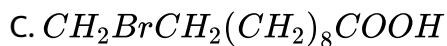


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243. The principal organic product formed in the reaction given below

is:





Answer: C

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244. The IUPAC name of the compound having the formula $(CH_3)_3C-CH=CH_2$ is

- A. 1,1-Dimethyl-3-butene
- B. 1,1,1-Trimethyl-3-propene
- C. 3,3-Dimethyl-1-butene
- D. 3,3,3-Trimethyl-1-propene.

Answer: C

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245. Benzene is obtained by fractional distillation of

- A. Heavy oil
- B. anthracene oil
- C. Middle oil
- D. Light oil

Answer: D

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246. In its reaction with silver nitrate acetylene shows

- A. Oxidising property
- B. Reducing property
- C. Basic property
- D. Acidic property

Answer: D

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247. A gas on passing through ammonical solution of $AgNO_3$ does not give any precipitate but decolourises alkaline $KMnO_4$ solution. The gas may be:



Answer: B

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248. Heating a mixture of sodium benzoate and soda lime gives

A. Benzene

B. Methane

C. Sodium benzoate

D. Calcium benzonate

Answer: A



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249. Octane number is zero for

A. n-Heptane

B. Isooctane

C. n-Hetane

D. Isopheptane

Answer: A



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250. 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. Electrolysis

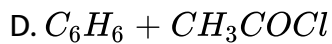
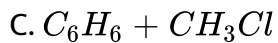
Answer: D



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251. In Friedel-Crafts acylation, besides $AlCl_3$, the other reactants are

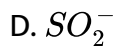
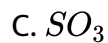
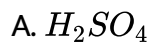
- A. $C_6H_6 + NH_3$
- B. $C_6H_6 + CH_3$



Answer: C

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252. Which of the following is active species in sulphonation of benzene ?



Answer: C

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253. Bond length of ethane (I), ethene (II), acetylene (III) and benzene (IV) follows the order

A. $I > II > III > IV$

B. $I > II > IV > III$

C. $I > IV > II > III$

D. $III > IV > II > I$

Answer: C



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254. On heating C_2H_2 to red hot the compound formed is

A. Ethylene

B. Benzene

C. Ethane

D. Methane

Answer: B

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255. An alkane C_7H_{16} is produced by the reaction of lithium di (3 – Pentyl) cuprate with ethyl bromide. The alkane produced is

A. 3-Methylhexane

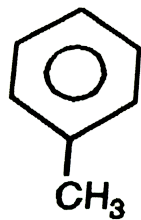
B. 2-Ethylpentane

C. 3-Ethylpentane

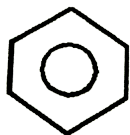
D. n-Heptane

Answer: C

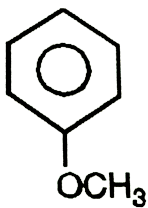
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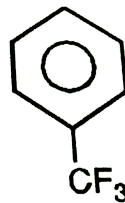
I



II



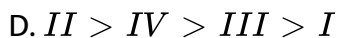
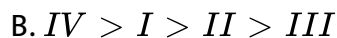
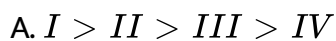
III



IV

256.

The correct arrangement for decreasing order of electrophilic substitution reactions .



Answer: A



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257. Which 2-butyne is treated with dil $.H_2SO_4/HgSO_4$ (4), the product formed is

- A. Butanol-1
- B. Butanone
- C. 2-Butanol
- D. Butanoic acid

Answer: B



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258. The conversion of $ClCH = CH - Cl$ to $Cl_2CH - CHCl_2$ can be carried out with

- A. Cl_2
- B. $Cl_2/h\nu$

C. $\text{Cl}_2 // \text{AlCl}_3 \sim$

D. $\text{Cl}_2 / \text{aq. NaOH}$

Answer: A

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259. One mole of 1,2-dibromopropane on treatment with X moles of NaNH_2 followed by treatment with ethyl bromide gave a pentyne. The value of X is:

A. One

B. Two

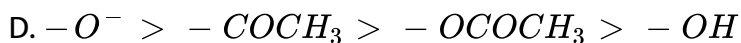
C. Three

D. Four

Answer: C

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260. The order of activity of the various o- and p-director is



Answer: A



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261. The conversion of 2,3-dibromobutane to 2-butene with Zn is

A. Redox reaction

B. α -Elimination

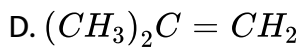
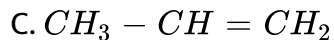
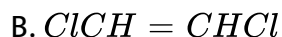
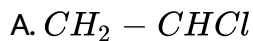
C. β -Elimination

D. Both α -elimination and redox reaction

Answer: A

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262. The addition of HBr is the easiest with



Answer: D

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263. Buta-1, 3-diene when treated with Br_2 gives

A. 1,4-Dibromo-2-butene

B. 1,3-Dibromo-2-butene

C. 3,4-Dibromo-1-butene

D. 2,3-Dibromo-2-butene

Answer: A

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264. 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-1-ene

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

Answer: A

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265. How many monochlorobutanes will be obtained on chlorination of n-butane?

- A. 1
- B. 2
- C. 3
- D. 4

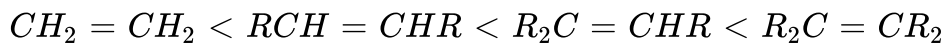
Answer: B



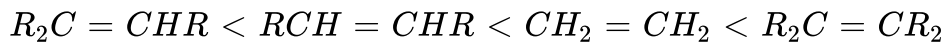
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266. Arrange the following compounds in increasing order of reactivity towards the addition of HBr $RCH = CHR$, $CH_2 = CH_2$, $R_2C = CHR$, $R_2C = CR_2$

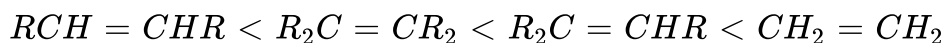
A.



B.



C.



D.

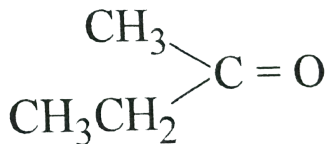
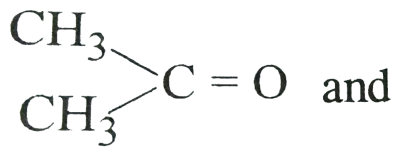


Answer: A



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267. An alkene having molecular formula C_7H_{14} was subjected to ozonolysis in the presence of zinc dust. An equimolar amount of the following two compounds was obtained



The IUPAC name of the alkene is

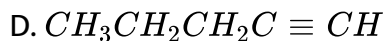
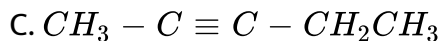
- A. 3,4-Dimethyl-3-pentane
- B. 2,4-Dimethyl-2-pentane
- C. 2,3-Dimethyl-3-pentane
- D. 2,3-Dimethyl-2-pentane

Answer: D

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

- A. $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}(3)$
- B. $\text{CH}_3\text{CH} = \text{CH} - \text{CH} = \text{CH}_2$



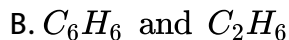
Answer: D

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269. Two organic compound A and B both containing only carbon and hydrogen, on quantities analysis gave the same percentage composition by weight:

$$C = (12/13) \times 100\%, H = (1/3) \times 100\%$$

A decolourises bromine water but B does not. A and B respectively are



Answer: A

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270. *n* – Butylbenzene on oxidation with hot alkaline $KMnO_4$ gives:

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

Answer: A

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271. Which of the following has highest octane number?

- A. n-Hexane

B. n-heptane

C. n-Pentane

D. 2,2,4-Trimethylpentane

Answer: D

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272. Tetrabromoethane on treatment with Zn gives

A. Ethyl bromide

B. Ethane

C. Ethene

D. Ethyne.

Answer: D

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273. Which of the following methods is most appropriate for the manufacture of methane?

- A. By reduction of CH_2Cl_2
- B. Wurtz reaction
- C. Liquefcaiton of natural gas
- D. None of these

Answer: C



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274. Pure methane can be prepared by

- A. Wurtz reaction
- B. Kolbe's electrolytic method
- C. Soda lime decarboxylation o

D. Reduction with H_2

Answer: C



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

A. Porosity of Al_2O_3

B. Temperature

C. Concentration

D. Surface area of Al_2O_3

Answer: D



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276. Which one of the following heptanols can be dehydrated to hept-3-ene only?

A. Heptan-3-ol

B. Heptan-4-ol

C. Heptan-2-ol

D. Heptan-1-ol

Answer: B



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

A. Catalytic hydrogenation of alkenes

B. Wurtz reaction

C. Hydrolysis of alkyl magnesium bromide

D. Kolbe's electrolytic method

Answer: E

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278. A fuel has the same knocking property as a mixture of 70% isooctane (2,2,4 trimethyl pentane) and 30% n heptane by volume, the octane number of the fuel is

A. 100

B. 70

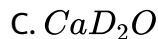
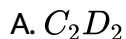
C. 50

D. 40

Answer: B

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279. What is formed when calcium carbide reacts with heavy water?



Answer: A



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280. when ethyl is heated with con. H_2SO_4 at 443K ethlene is formed by

A. Intramolecular hydration

B. Intermolecular hydration

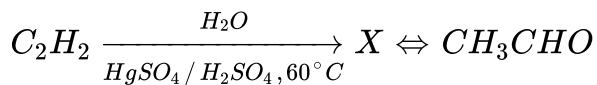
C. Intermolecular dehydration

D. Intramolecular dehydration

Answer: D

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281. In the following reaction



What is X?

- A. CH_3CH_2OH
- B. $CH_3 - O - CH_2$
- C. CH_3CH_2CHO
- D. $CH_2 = CHOH$

Answer: D

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282. Which of the following possesses the highest melting point?

- A. Chlorobenzene
- B. o-Dichlorobenzene
- C. m-Dichlorobenzene
- D. p-Dichlorobenzene

Answer: D



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283. Which of the following hydrocarbons is liquid at room temperature?

- A. Pentane
- B. Butane
- C. Propane
- D. Ethane

Answer: A

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284. When 2-pentyne is treated with dilute H_2SO_4 and $HgSO_4$ the product formed is

A. 1-pentanol

B. 2-pentanol

C. 3-pentanol

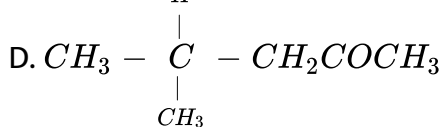
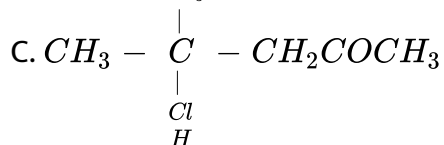
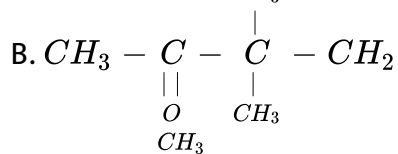
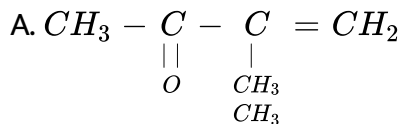
D. 4-pentanol

Answer: C

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285. Indicate the organic structure for the product expected when 2-methylpropene is heated with acetyl chloride in the presence of

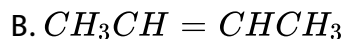
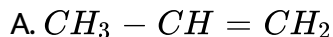
anhydrous $ZnCl_2$.

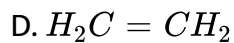
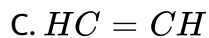


Answer: C

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286. An organic compound on treatment with Br_2/CCl_4 , gives a bromoderivative alkene. The compound will be





Answer: C

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287. Position of double bond in alkene can be identified by

A. Bromide water

B. Ammonical silver nitrate solution

C. Ozonolysis

D. None of these

Answer: C

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288. Which one of the following have lowest octane number

A. Iso-octane

B. n-heptane

C. n-Hexane

D. n-Hexadecane

Answer: D



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289. A salt producing hydrocarbon among these compound is

A. Ehtyne

B. Ethene

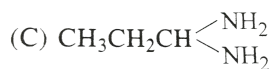
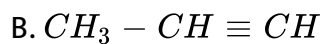
C. Methane

D. Ethane

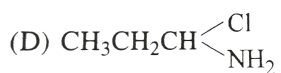
Answer: A

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290. When $CH_3CH_2CHCl_2$ is treated with $NaNH_2$ the product formed is



C.

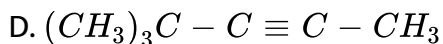
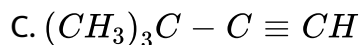
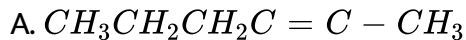


D.

Answer: B

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291. Choose the compound which can react with $[Ag(NH_3)_2]^+$ and on treatment with alkaline $KMnO_4$ gives $(CH_3)_3C - OOH$

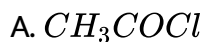


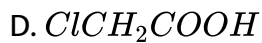
Answer: C



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292. When acetylene reacts with an excess of hypochlorous acid, the product formed is





Answer: C

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293. Which of these will not react with acetylene?



B. Ammoniacal silver nitrate

C. Na

D. HCl

Answer: A

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294. Which of the following does not show geometrical isomerism?

A. 1,2-Dichloropent-1-ene

B. 1,3-Dichloropent-2-ene

C. 1,1-Dichloropent-1-ene

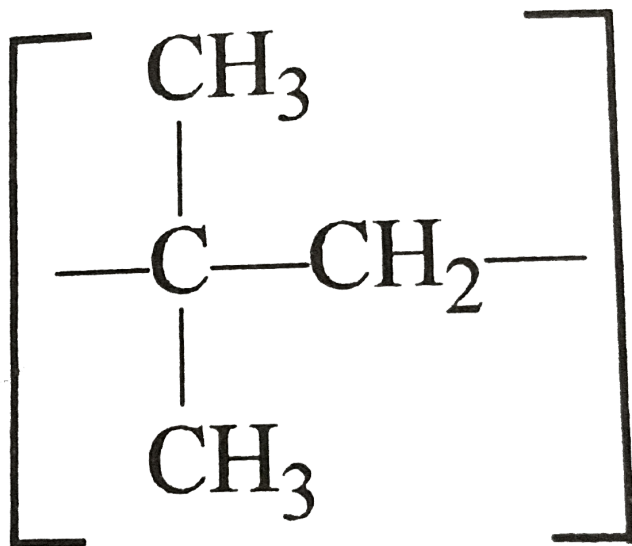
D. 1,4-Dichloropent-2-ene

Answer: C



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295. Lewisite is:



A. 2-Methylpropene

B. Styrene

C. Propylene

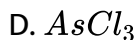
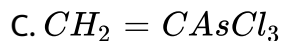
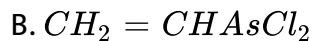
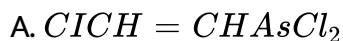
D. Ethene

Answer: A



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296. When acetylene is treated with HBr the product is



Answer: A



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297. When acetylene is treated with HBr the product is

A. Methyl bromide

B. Ethylene bromide

C. Ethyl bromide

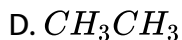
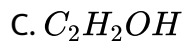
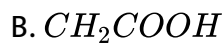
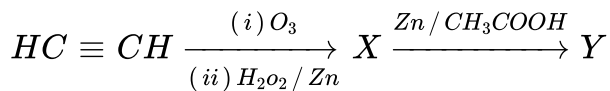
D. Ethylidene bromide

Answer: D



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298. Identify the compound 'Y' in the following sequence of reaction



Answer: A



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299. The chemical added to leaded petrol to prevent the deposition of lead in the combustion chamber is:

- A. isooctane
- B. ethylene dibromide
- C. tetraethyl lead
- D. mercaptan

Answer: B



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300. Hydrolysis of ozonide of but-1-ene gives

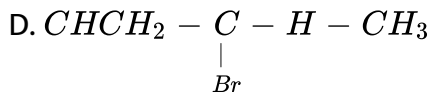
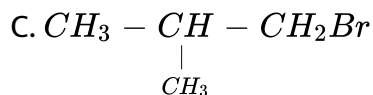
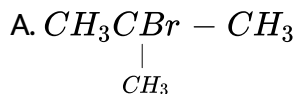
- A. ethyl only
- B. acetaldehyde and formaldehyde
- C. propionaldehyde and formaldehyde

D. acetaldehyde only

Answer: C

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301. The reaction of HBr with $\text{CH}_3\text{C}(\text{CH}_3)_2\text{CH}_2\text{CH}_3$



Answer: C

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

- A. isopentane
- B. neopentane
- C. propane
- D. pentane

Answer: B



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303. The ortho/para directing group among the following is

- A. $-COOH$
- B. $-CN$
- C. $-COCH_3$

D. $NHCOCH_3$

Answer: D

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

A. H_2O / H_2SO_4

B. $Hg(OAc)_2 / H_2O$ followed by $NaBH_4$

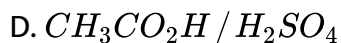
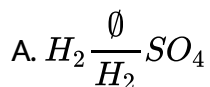
C. B_2H_6 followed by H_2O_2

D. CH_3CO_2H / H_2O

Answer: B

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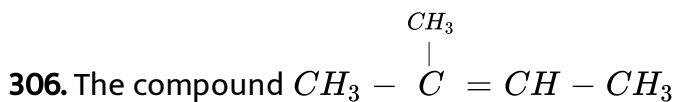
305. Prop-1-ol can be prepared from propene



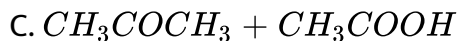
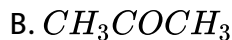
Answer: C

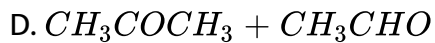


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on reaction with NaO_4 in the presence of $KMnO_4$ gives

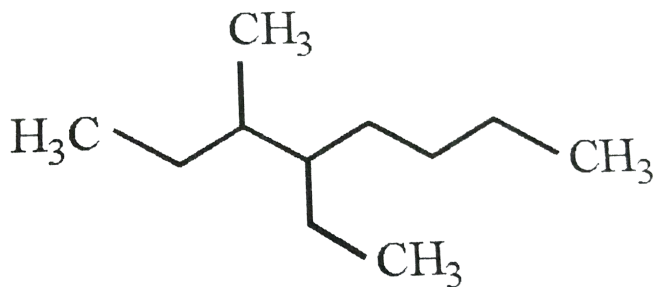




Answer: C

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307. Name the compound given below:



- A. 5-Ethyl-6methyloctane
- B. 4-Ethyl-3-methyloctane
- C. 3-Methyl-4-ethylocatne2-3-Diethylpentane
- D. 3-Ethyl-4-methyloctane

Answer: B





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

A. $I > II > III$

B. $II > II >$

C. $II > III > I$

D. $I < II > III$

Answer: A



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309. Reaction of HBr with propene in the presence of peroxide gives

A. isopropyl bromide

B. 3-bromo-propane

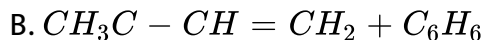
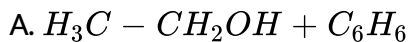
C. allyl bromide

D. n-propyl bromide

Answer: D

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



Answer: C

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311. Which one of the following has the minimum boiling point?

- A. n-Butane
- B. Isobutane
- C. 1-Butene
- D. 1-Butyne

Answer: B



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312. Which one of the following is reduced with zinc and hydrochloric acid to give the corresponding hydrocarbon?

- A. Ethyl acetate
- B. Butan-2-one

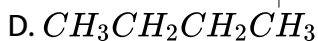
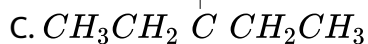
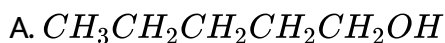
C. Acetamide

D. Acetic acid.

Answer: B

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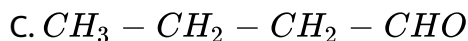
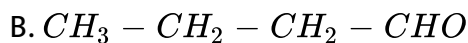
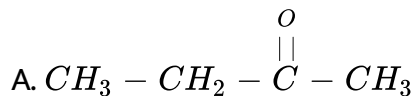
313. Among the following compounds which can be dehydrated very easily is:



Answer: C

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314. $CH_3 - CH_2 - CH = CH_2 \xrightarrow[H_2SO_4]{HgSO_4}$, the compound A is

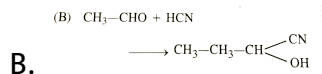
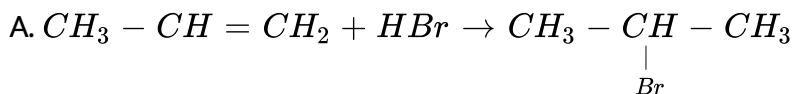


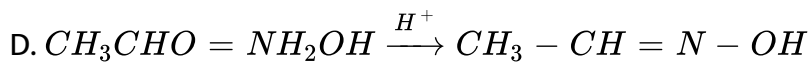
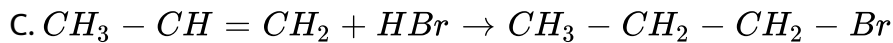
D. None of these

Answer: A

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315. Which one of the following requires radical intermediates?

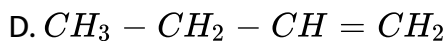
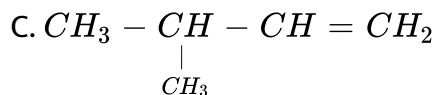
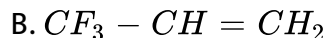
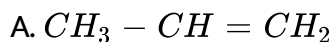




Answer: C

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316. Which does not follow Markowini rule?

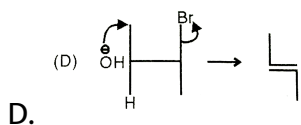
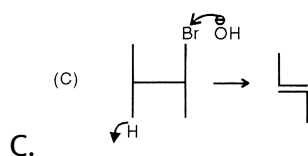
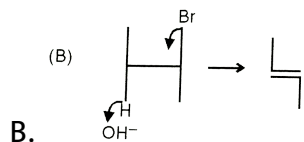
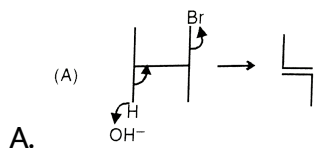


Answer: B

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317. Dehydrohalogenation in presence of OH^- is correctly represented

by

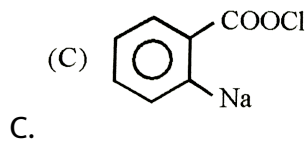
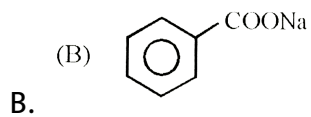
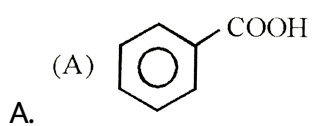


Answer: A



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318. 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: D



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319. Octane number can be changed by:

A. Isomerisation

B. Alkylation

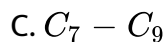
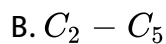
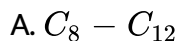
C. Cyclisation

D. All of these

Answer: D

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320. Octane number can be changed by

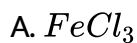


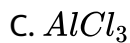
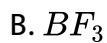
D. None of these

Answer: C

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321. Which of the following can't be used in Friedel-Crafts reactions?

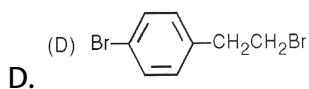
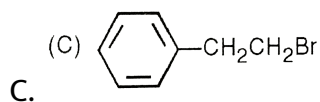
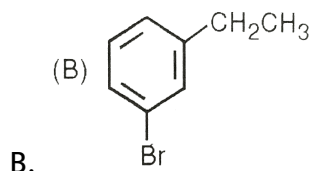
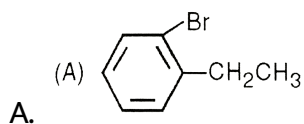




Answer: D

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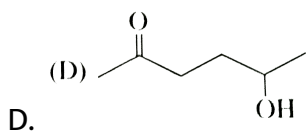
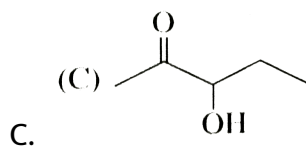
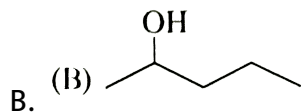
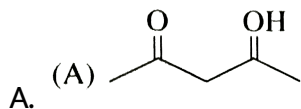
322. Ethylbenzene with bromine in the presence of $FeBr_3$ predominantly gives



Answer: D

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323. Which of the following will be most readily dehydrated in acidic conditions ?



Answer: A

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324. When a mixture of methane and oxygen is passed through heated molybdenum oxide, the main product formed is

A. methanoic acid

B. ethanol

C. methanol

D. methanol

Answer: D



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325. Benzene can be obtained by heating either benzoic acid with X or phenol with Y. X and Y, respectively are

A. zinc dust and soda lime

B. soda lime and zinc dust

C. zinc dust and sodium hydroxide

D. soda lime and lime

Answer: B

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326. On treating a mixture of two alkyl halides with sodium metal in dry ether, 2-methylpropane was obtained. The alkyl halides are

A. 2-chloropropane and chloromethane

B. 2-chloropropane and chloroethane

C. chloromethane and chloroethane

D. chloromethane and chloropropane

Answer: A

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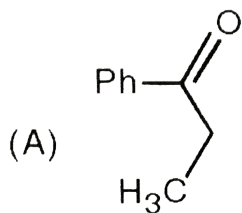
327. In acetylene molecule, the carbon atoms are linked by:

- A. one sigma bond and two pi bonds
- B. two sigma bond and one pi bond
- C. three pi bonds
- D. Four pi bonds

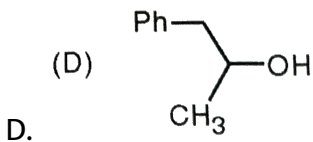
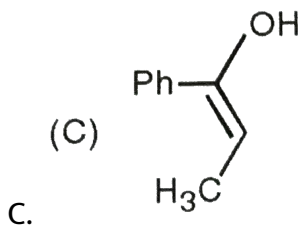
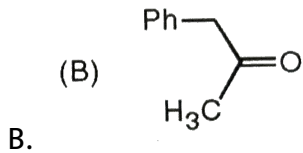
Answer: A

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328. $Ph - C \equiv C - CH_3 \xrightarrow{Hg^{2+} / H^+} A$, A is



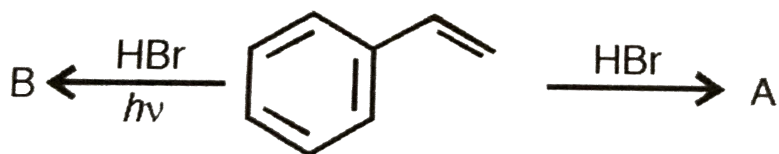
A.

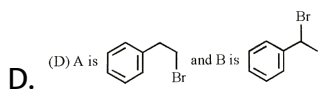
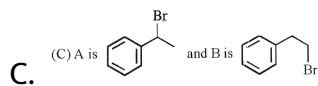
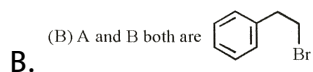
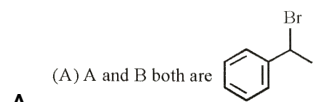


Answer: B

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329. Observe the following reactions and predict the nature A and B





Answer: C

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330. An alkene of molecular formula C_9H_{18} on ozonolysis gives 2,2-dimethyl propanal and 2-butanone, then the alkene is

A. 2,2,4-Trimethyl-3-hexene

B. 2,2,6-Trimethyl-3-hexene

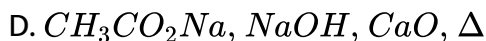
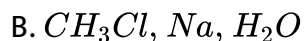
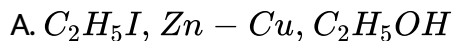
C. 2,3,4-Trimethyl-3-hexene

D. 2,2,4-Trimethyl-2-hexene

Answer: A

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331. The chemical and the reaction conditions required for the preparation of ethane are



Answer: A

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332. The compound prepared by a substitution reaction of benzene is

A. Acetophenone

B. Glyoxal

C. Cyclohexane

D. Hexabromo cyclohexane

Answer: A

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333. Which of the following gives propyne on hydrolysis ?

A. Al_4C_3

B. Mg_2C_3

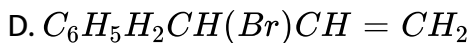
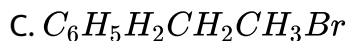
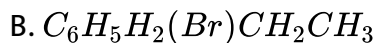
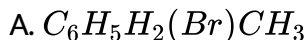
C. B_4C

D. La_4C_3

Answer: B

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334. 3-Phenylpropene on reaction with HBr gives (as major product)



Answer: A



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335. Acid catalysed hydration of alkenes except ethene leads to the formatio of :

A. primary alcohol

B. secondary or tertiary alcohol

C. mixture of primary and secondary alcohols

D. mixture of secondary and tertiary alcohols

Answer: C

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336. Reaction of one molecule of HBr with one molecule of 1,3-butadiene at $40^{\circ}C$ gives predominantly

A. 3-bromobutene under kinetically controlled conditions

B. 1-bromo-2-butene under thermodynamically controlled conditions

C. 3-bromobutene under thermodynamically controlled conditions

D. 1-bromo-2-butene under kinetic controlled conditions

Answer: B

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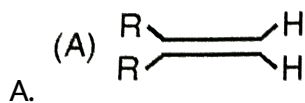
337. 2-Methylbutane on reaction with bromine in the presence of sunlight gives mainly-

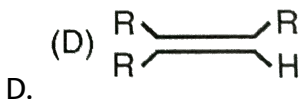
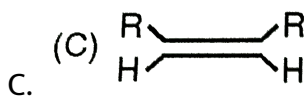
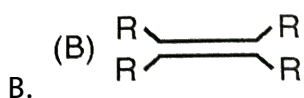
- A. 1-bromo-2-methylbutane
- B. 2-bromo-2-methylbutane
- C. 2-bromo-3-methylbutane
- D. 1-bromo-3-methylbutane

Answer: B

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338. Which of the following alkenes will react faster with H_2 under catalytic hydrogenation conditions?

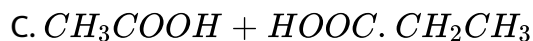
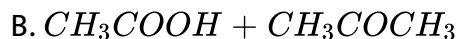
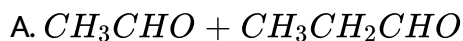
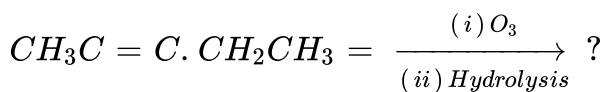




Answer: C

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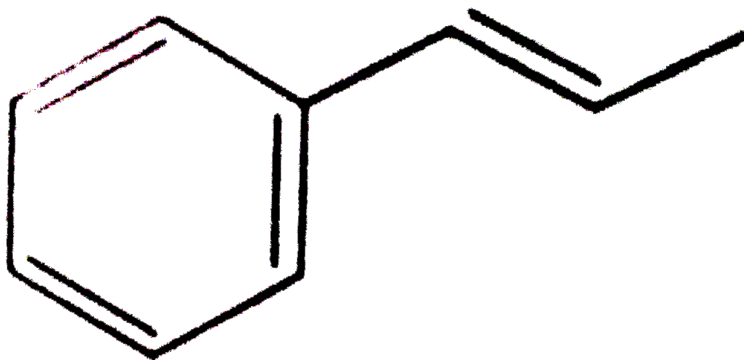
339. The product of the following reaction are



Answer: C

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340. How many bonds are there in



A. 14σ , 8π

B. 18σ , 8π

C. 19σ , 4π

D. 14σ , 2π

Answer: C

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341. Of the five isomeric hexanes, the isomer which can give two monochlorinated compounds is

- A. n-Hexane
- B. 2,3-dimethyl-butane
- C. 2,2-dimethyl-butane
- D. 2-methyl pentane

Answer: B

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342. The number of sigma and pi bonds in benzene are

- A. 6σ , 13π
- B. 12σ , 3π

C. 3σ and 12π

D. 6σ and 6π

Answer: B

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343. Alkyl halides react with dialkyl copper reagents to give

A. alkenes

B. alkyl copper halides

C. alkanes

D. alkenyl halides

Answer: C

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344. Elimination of HBr from 2-bromobutane results in the formation of .

- A. equimolar mixture of 1- and 2-butane
- B. predominantly 2-butene
- C. predominantly 2-butanone
- D. predominantly 1-butyne

Answer: B



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345. An alkene on reductive ozonolysis gives two molecules of $CH_2(CHO)_2$. The alkene is:

- A. 2,4-hexadiene
- B. 1,3-cyclohexadiene

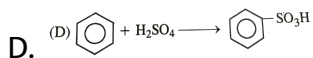
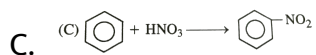
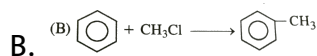
C. 1,4-cyclohexadiene

D. 1-methyl-1-3-cyclo penta diene

Answer: C

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346. In Which one of the following poly substitution otakes place?



Answer: B

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347. An alkyl halide by formation of its Grignard reagent and heating with water gives propane. What is the original alkyl halide?

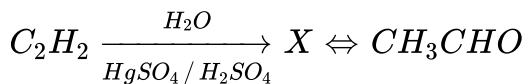
- A. methyl iodide
- B. ethyl iodide
- C. Ethyl bromide
- D. propyl bromide

Answer: D



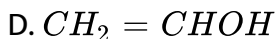
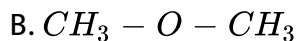
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348. In the following reaction



What is X

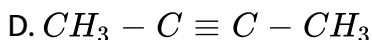
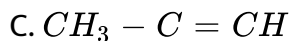
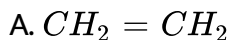
- A. CH_3CH_2OH



Answer: D

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349. An organic compound decolorizes Br_2 water and also gives red ppt. with Cu_2Cl_2 solution the compound is



Answer: C

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350. A hydrocarbon of molecular formula C_6H_{10} reacts with sodamide and the same on ozolysis followed by hydrogen peroxide oxidation gives two molecules of carboxylic acids, one being optically active. Then the hydrocarbon must be

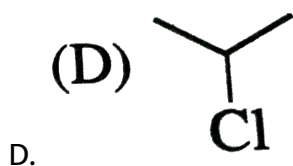
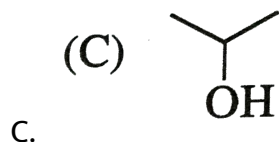
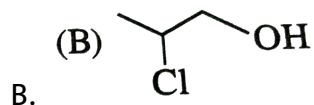
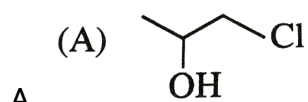
- A. 1-hexyne
- B. 2-hexyne
- C. 3-hexane
- D. 3-methyl-1-pentane

Answer: D



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351. Propaen on reaction with chlorine water gives



Answer: A

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352. Under which one of the following conditions. Does the reaction.

A. $NH_4OH / 80^\circ C$

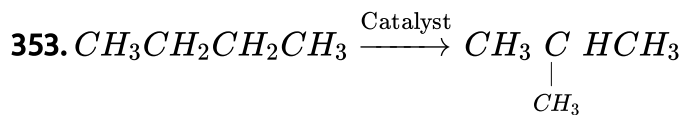
B. *Conc.* $H_2SO_4 / 160^\circ C$

C. anhydrous $ZnCl_2 / 150^\circ C$

D. dilute HCl , THF , $80^{\circ}C$

Answer: E

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The catalyst used in the above conversion is

A. $ZnCl_2 / HCl$

B. $AlCl_3 / HCl$

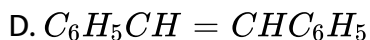
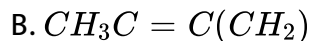
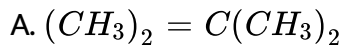
C. $PbCl_2 / HCl$

D. $CuCl / HCl$

Answer: B

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354. Oxidation of an alkene (X) gives a diol. Further oxidation gives a diketone. Which one of the following could be X ?



Answer: D



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355. The major product formed when 3, 3-dimethylbutan-2-ol is heated with concentrated sulphuric acid is

A. 2,3-dimethyl-2-butene

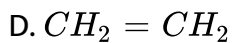
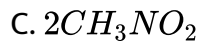
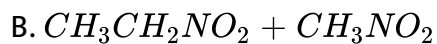
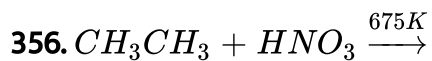
B. 2,3-dimethyl-1-butene

C. 3,3-dimethyl-1-butene

D. cis and trans isomers of 2,3-dimethyl-1-butene.

Answer: A

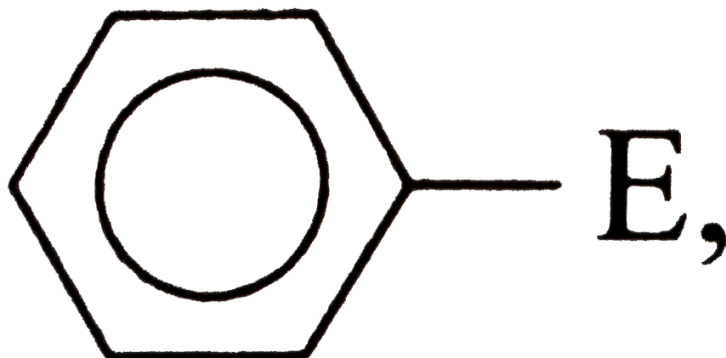
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Answer: B

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357. In a compound



electrophilic substitution has occurred the substituents E are methyl $-CH_3$, $-CH_2Cl$, $-CHCl_2$ and $-CCl_3$ the correct increasing order towards electrophilic substitution is

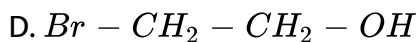
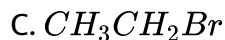
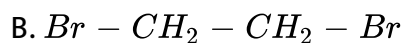
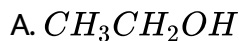
- A. $-CH_3 < -CH_2Cl < -CHCl_2 < -CCl_3$
- B. $-CH_3 < -CH_2Cl < -CH_2Cl < -CCl_3$
- C. $-CCl_3 < -CH_2Cl < -CHCl_2 < -CH_3$
- D. $-CCl_3 < -CHCl_2 < -CH_2Cl < -CH_3$

Answer: D



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358. From which one of the following can both ethylene and acetylene be prepared in a single step reaction?



Answer: B



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359. Which one of the following is not aromatic

A. Benzene

B. Cyclopenta dienyl cation

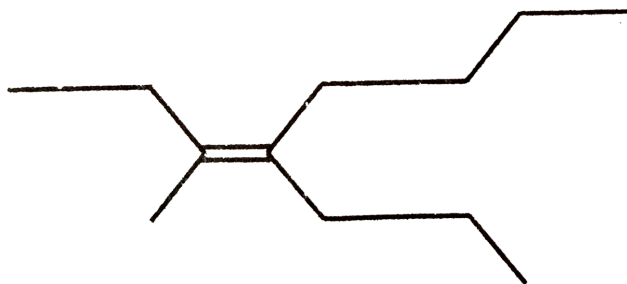
C. Cyclopropenyl cation

D. Tropylium cation

Answer: D

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360. Give the *IUPAC* name of the alkene



A. Z-3-methyl-4-propyl-3-octane

B. E-3-methyl-4-propyl-3-octane

C. E-4-butyl-3-methyl-3-heptane

D. E-2-ethyl-3-propyl-2-heptane

Answer: A

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361. Of the isomeric hexanes, the isomers that give the minimum and maximum number of monochloro derivatives are, respectively,

A. 3-methyl pentane and 2,3 dimethyl butane

B. 2,3-dimethyl butane and n-hexane

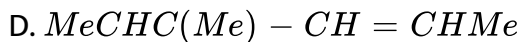
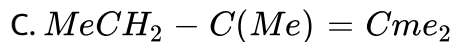
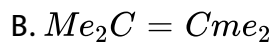
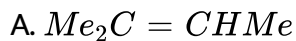
C. 2,2-dimethyl butane and 2 methyl pentane

D. 2,3-dimethyl and 2-methyl pentane

Answer: E

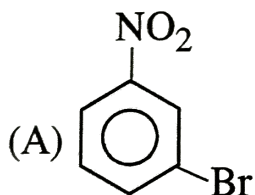
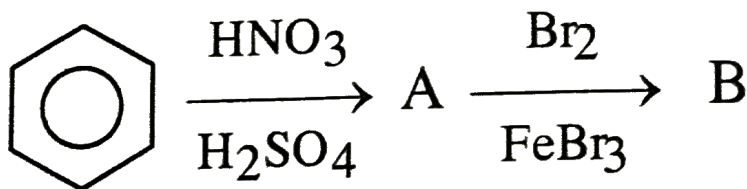
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362. Which of the following gives on ozonolysis both aldehydes and ketones?

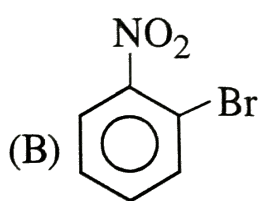


Answer: A

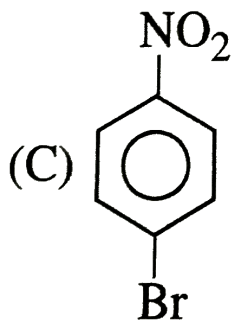
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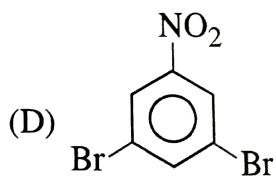
A.



B.



C.



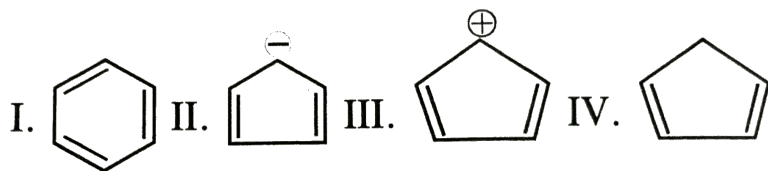
D.

Answer: A



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364. Match the following list



A. All of the above

B. I and II

C. III and IV

D. I,IV

Answer: C,D

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365. Which one of the following does not obey Huckel's rule for aromaticity?

List one	List two
(1) $\text{CH}_4 \rightarrow \text{HCN}$	I. $\text{NH}_3/\text{Al}_2\text{O}_3/1000^\circ\text{C}$
(2) $\text{C}_2\text{H}_2 \rightarrow \text{CH}_3\text{CHO}$	II. 450°C , Heating
(3) $\text{C}_2\text{H}_4 \rightarrow \text{C}_2\text{H}_5\text{OH}$	III. 40% H_2SO_4 , 10% HgSO_4
(4) $\text{C}_2\text{H}_6 \rightarrow \text{C}_2\text{H}_4$	IV. Na, dry ether.

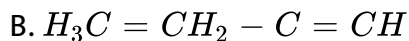
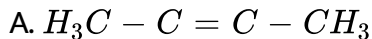
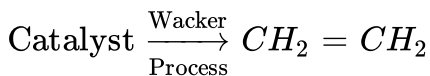
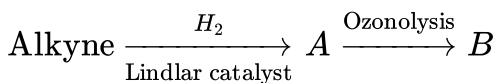
The correct match is

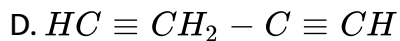
	1	2	3	4
A	I	III	IV	II
B	I	II	IV	III
C	I	IV	III	II
D	II	I	IV	III.



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366. Identify the alkyne in the following sequence of reactions





Answer: A

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367. One mole of X on ozonolysis gave one mole of acetaldehyde and one mole of acetone. The IUPAC name of compound is

A. 2-methyl-2-butene

B. 2-methyl-1-butene

C. 2-Butene

D. 1-Butene

Answer: A

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368. The carbon carbon bond length in benzene is

A. in between C_2H_6 and C_2H_4

B. Same as in C_2H_4

C. In between C_2H_6 and C_2H_2

D. In between C_2H_4 and C_2H_2

Answer: A



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369. The addition of HBr to 2-pentene gives

A. 2 bromopentane only

B. 2 bromo pentane only

C. 2 bromopentane and 3 bromopentane

D. 1 bromopentane and 3 bromo-pentane

Answer: C

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370. Ethylene can be separated from acetylene by passing the mixture through

A. fuming sulphuric acid

B. pyrogallol

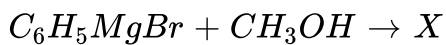
C. ammonical Cu_2Cl_2

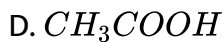
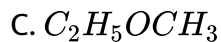
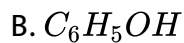
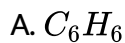
D. Charcoal powder

Answer: C

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371. In the reaction given below, X is





Answer: A

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372. Towards electrophilic reagents

A. ethane is more reactive than ethyne

B. ethen is less reactive than ethyne

C. both are equally reactive

D. reactivity of both cannot be predicated

Answer: A

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373. When neopentyl bromide is subjected to Wurtz reaction, the product formed is

- A. 2,2,4,4-tetramethyl hexane
- B. 2,2,4,4-tetramethyl pentane
- C. 2,2,5,5-tetramethyl hexane
- D. 2,2,3,3-tetramethyl hexane

Answer: D



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374. Pick out the correct statement from the following and choose the correct answer from the codes given below

- (1) Hex-1,5-diene is a conjugated diene
- (2) Prop-1,2-diene is a conjugated diene

(3) Hexa-1,3-diene is a conjugated diene

(4) Buta-1,3, diene is an isolated diene

(5) Prop-1,2-diene is a cumulative diene

A. 1,2

B. 2,3

C. 4,5

D. 3,5

Answer: E



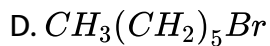
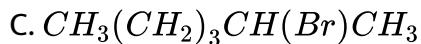
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375. An alkyl bromide reacts with Na metal to form 4, 5-diethyl octane.

The bromide is

A. $CH_3(CH_2)Br$

B. $CH_3(CH_2)_2CH(Br)CH_2CH_3$



Answer: B

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376. The reaction $CH_3CH_2Cl \xrightarrow[(ii) Cu]{(i) Li} \xrightarrow{CH_3CH_2Cl} n$ - butane is known

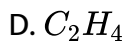
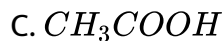
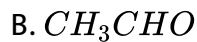
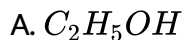
as

- A. Wurtz synthesis
- B. Corey House synthesis
- C. Kolbe synthesis
- D. Friedel Craft Synthesis

Answer: B

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377. Acetylene when treated with dil. H_2SO_4 and $HgSO_4$ given



Answer: B



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378. Benzene can undergo

A. Substitution reaction

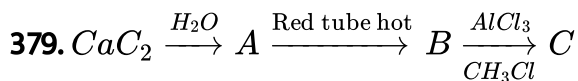
B. Addition reaction

C. Condensation reaction

D. Condensation reaction

Answer: A

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In this sequence B and C are.

A. benzene

B. Ethylbenzene

C. toluene

D. n-propylbenzene

Answer: C

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380. The compound with molecular formula C_8H_{10} which will give only two isomers on electrophilic substitution with $Cl_2/FeCl_3$ or with

HNO_3 / H_2SO_4 is

- A. p-dimethylbenzene
- B. m-dimethylbenzene
- C. o-methylbenzene
- D. ethylbenzene

Answer: B



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381. Halide which does not get hydrolysed by sodium hydroxide.

- A. vinyl chloride
- B. methyl chloride
- C. ethyl chloride
- D. isopropyl chloride

Answer: B

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382. The decreasing order of acidic character among ethane(I), ethene(II), ethyne(III) and propyne (IV) is

A. $I > II > III > IV$

B. $II > III > I > IV$

C. $III > IV > II > I$

D. $IV > III > II > I$

Answer: C

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383. The alkene that will give the same product with HBr in the presence as well as in the presence of peroxide is

A. 2-Butene

B. 1-butene

C. propene

D. 1-hexane

Answer: A



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384. Chlorination of benzene in the presence of halogen carrier is an example is

A. aromatic nucleophilic substitution

B. aromatic electrophilic substitution

C. aromatic nucleophilic addition

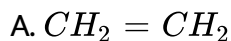
D. aromatic electrophilic addition

Answer: B



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385. In Kolbe's electrolysis method, electrolysis of aqueous solution of sodium succinate is used to prepare



Answer: A



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386. Ozonolysis of an organic compound gives formaldehyde as one of the products. This confirms the presence of

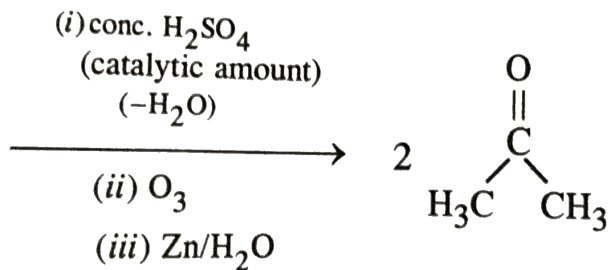
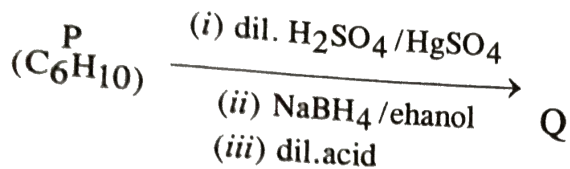
A. a vinyl group

- B. an isopropyl group
- C. an acetylenic triple bond
- D. two ethylenic double bonds.

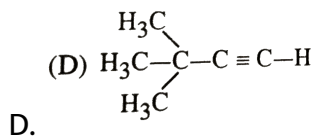
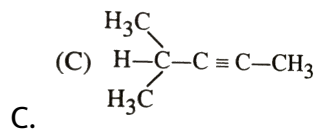
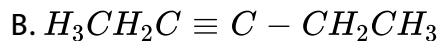
Answer: A

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387. An acyclic hydrocarbon P, having molecular formula C_6H_{10} gave acetone as the only organic product through the following sequence of reaction in which Q is an intermediate organic compound



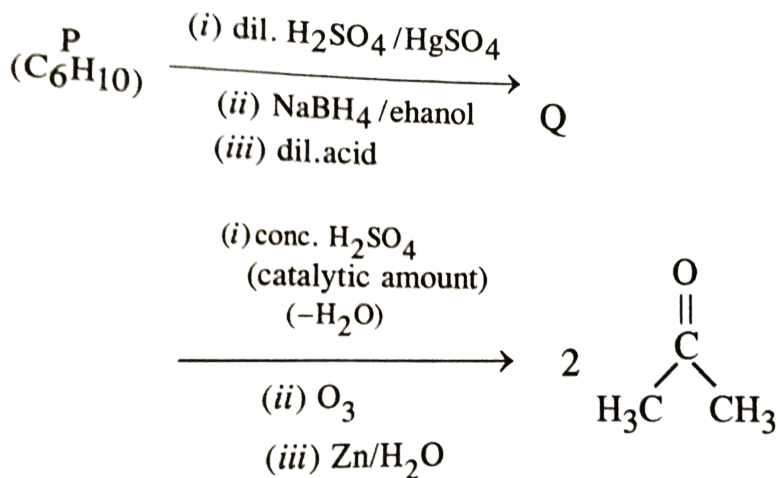
The structure of compound P is



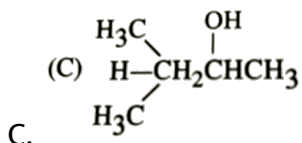
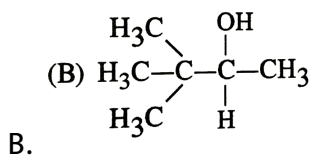
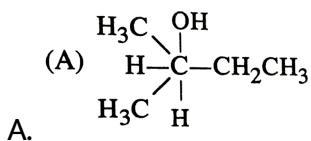
Answer: D

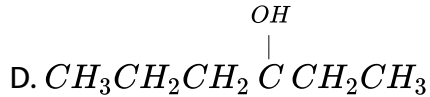
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388. An acyclic hydrocarbon P, having molecular formula C_6H_{10} gave acetone as the only organic product through the following sequence of reaction in which Q is an intermediate organic compound



The structure of the compound Q is





Answer: B

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389. Which branched chain isomer of the hydrocarbon with molecular mass 72μ gives only one isomer of mono substituted alkyl halide ?

- A. Tertiary butyl chloride
- B. neopentane
- C. Isohexane
- D. Neohexane

Answer: B

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390. Hex-2-yne gives trans hex-2-ene on treatment with :

A. Pt / H_2O

B. Li / NH_3

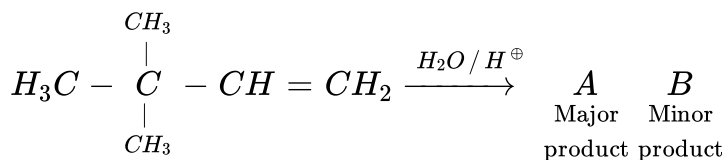
C. $Pd / PdSO_4$

D. $LiAlH_4$

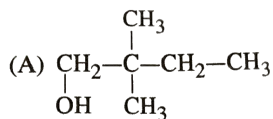
Answer: B

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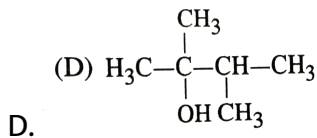
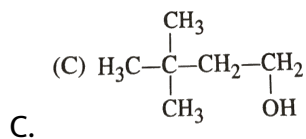
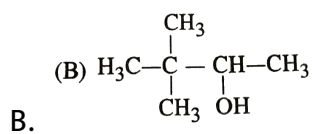
391. In the following reaction



The major product is



A.



Answer: D

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392. In allene (C_3H_4), the type(s) of hybridisation of the carbon atoms, is (are)

A. sp and sp^3

B. sp and sp^2

C. only sp^3

D. sp^2 and sp^3

Answer: B

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393. Which of the following reagents will be able to distinguish between 1 – butyne and 2 – butyne ?

A. Na / NH_2

B. HCl

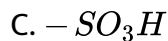
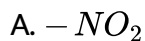
C. O_2

D. Br_2

Answer: A

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394. Some meta-directing substituents in aromatic substitution are given which one is the most deactivating?



Answer: A

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395. Benzene and naphthalene form an ideal solution at room temperature. For this process, the true statement(s) is (are)

A. ΔH is positive

B. ΔS_{system} is positive

C. $\Delta S(\text{surroundings}) = 0$

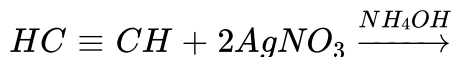
D. $\Delta H = 0$

Answer: B,C,D



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396. In the reaction,



$X + 2NH_4NO_3 + 2H_2O$, X is

A. Ag_2C

B. Ag_2C_2

C. AgC

D. AgOH

Answer: B



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397. Isopropyl benzene is oxidised in the presence of air to a compound 'A'. When compound 'A' is treated with dilute mineral acid, the aromatic

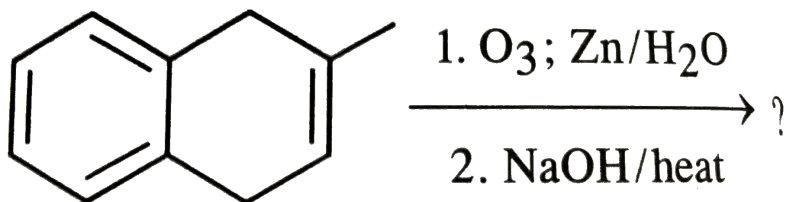
product formed is :

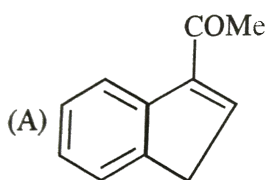
- A. Phenol
- B. benzene
- C. benzaldehyde
- D. acetophenone

Answer: A

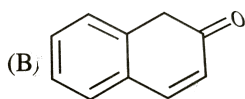
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398. Predict the product in the following reactions

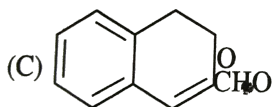




A.



B.



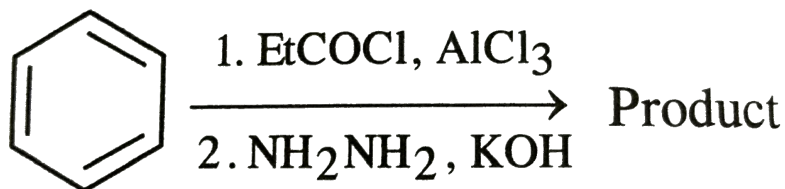
C.

D. None of these

Answer: A

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399. What will be the product in the following reaction?



A. Isopropyl benzene

B. n-Propyl benzene

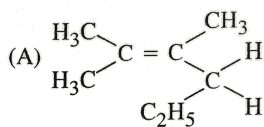
C. Ethyl benzene

D. t-Butyl benzene

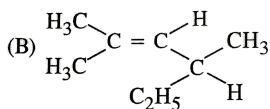
Answer: B

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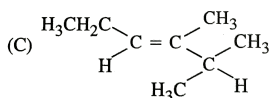
400. An optically active compound having molecular formula C_8H_{10} on ozonolysis gives acetone as one of the products. The structure of the compound is



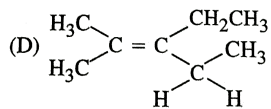
A.



B.



C.



D.

Answer: B



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401. Aqueous solution of the following compounds are electrolysed .

Acetylene gas is obtained from

- sodium acetate
- Sodium maleate
- Sodium succinate
- Sodium fumerate.

Answer: B,D



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402. Carboxylic acids are converted into alkanes by

- A. Decarboxylation
- B. Clemensen's reduction
- C. Kolbe's electrolysis
- D. $LiAlH_4$

Answer: A,C



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403. Which of the following reactions cannot be used for the preparation of methane?

- A. Kolbe's electrolysis
- B. Soda lime decarboxylation

C. Wurtz reaction

D. Reduction of CH_3Cl with $LiAlH_4$

Answer: A,C

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404. Which of the following carbide can be used to prepare methane by its action with water?

A. Calcium carbide

B. Silicon carbide

C. Aluminium carbide

D. Beryllium carbide

Answer: C,D

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405. Benzene can be prepared by

- A. Decarboxylation of sodium benzoate
- B. reduction of benzyl chloride with Ni-Al alloy and NaOH
- C. distillation of phenol with zinc dust
- D. Fittig reaction.

Answer: A,C



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406. Which of the following on reductive ozonolysis will give only glyoxal?

- A. Ethane
- B. Benzene
- C. toluene

D. Acetylene

Answer: B,D

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407. Which of the following on treatment with warm dil. H_2SO_4 in the presence of $HgSO_4$ will give butan-2-one?

A. But-1-yne

B. But-2-yne

C. But-1-ene

D. But-2-yne

Answer: A,B

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408. Which of the following can be used to distinguish between 1-butyne and 2-butyne?

- A. Grignard reagent
- B. Ammonical $AgNO_3$
- C. ammonical Cu_2Cl_2
- D. Baeyer's reagent

Answer: A,B,C



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409. Which of the following can be used to distinguish between 1-butene and 2-butene?

- A. Baeyer's reagent
- B. Hot alk. $KMnO_4$

C. Reductive ozonolysis

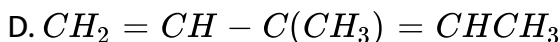
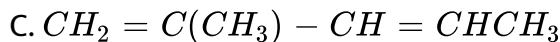
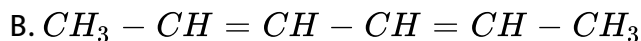
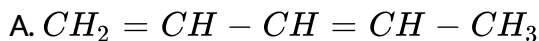
D. Tollen's reagent

Answer: B,C

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410. One mole of an unsaturated hydrocarbon on reductive hydrolysis gives one mole each of formaldehyde, acetaldehyde and methyl glyoxal.

The hydrocarbon is



Answer: C,D

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411. The reagent/reagents required for the conversion of

- A. Baeyer's reagent
- B. O_3 followed by Zn / H_2O
- C. $KMnO_4 / H^+$
- D. Lemieux reagent.

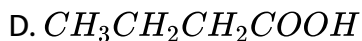
Answer: B,D



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412. When pent-2-yne is treated with $H_2 \xrightarrow{Hg^{2+}} H^+$ the products formed are

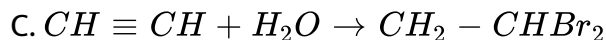
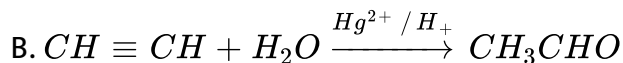
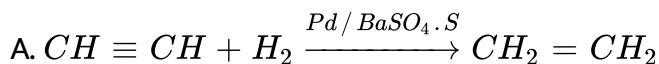
- A. $CH_3COCH_2CH_2CH_3$
- B. $CH_3CH_2COCH_2CH_3$



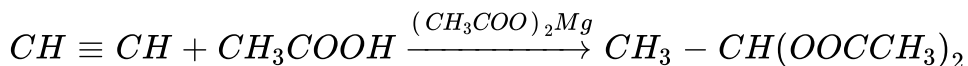
Answer: A,B

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413. Which of the following is an example of nucleophilic addition reaction



D.



Answer: B,D

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414. Toluene can be prepared by

- A. Heated sodium salt of p-toulic acid with soda lime
- B. Distillation m-cresol with Zn dust
- C. Treating phenylmagnesium bromide with methanol
- D. Reduction of benzyl alcohols with HI and red P.

Answer: A,B,D



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415. The molecule (s) that will have dipole moment is/are:

- A. 2,2-Dimethylpropane
- B. trans-2-Pentene
- C. cis-3-Hexane

D. 2,2,3,3-tetramethylbutane.

Answer: B,C

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416. Benzylchloride ($C_6H_5CH_2Cl$) can be prepared from toluene by chlorination with :

A. SO_2Cl_2

B. $SOCl_2$

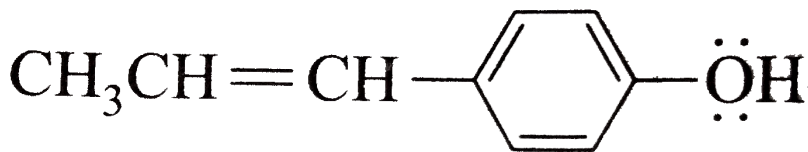
C. Cl_2

D. NaOCl

Answer: A,C

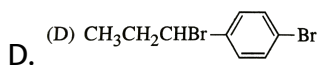
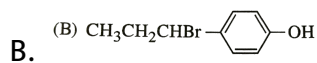
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417. The reaction of



with HBr

gives



Answer: A,B

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418. Toluene, when treated with $\frac{\text{Br}_2}{\text{Fe}}$, gives p-bromotoluene as the major product because the $-\text{CH}_3$ group of toluene is

- A. is p-directing
- B. is m-directing
- C. activates the ring by hyperconjugation
- D. deactivates the ring

Answer: A,C

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419. 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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420. The reaction of toluene with Cl_2 in presence of $FeCl_3$ gives predominantly

- A. Benzoyl chloride
- B. m-Chlorotoluene
- C. Benzyl chloride
- D. p- and o-Chlorotoluene.

Answer: D



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421. Bayer's reagent is

- A. alkaline permanganate solution

- B. acidified permanganate solution
- C. neutral permanganate solution
- D. aqueous bromine solution

Answer: A

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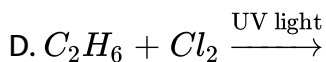
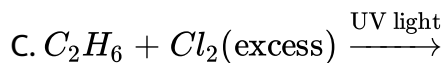
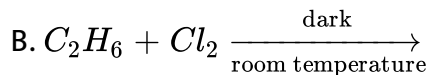
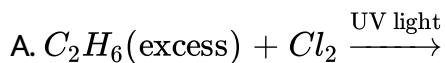
422. Anti-Markownikoff's addition of HBr is not observed in-

- A. Propene
- B. 1-Butene
- C. But-2-ene
- D. Pent-2-ene

Answer: C

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423. The reaction conditions leading to the best yield of C_2H_5Cl are



Answer: A



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424. The highest boiling point is expected for:

A. isooctane

B. n-Octane

C. 2,2,3,3-Tetramethylbutane

D. n-Butane

Answer: B



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425. The number of structural and configurational isomers of a bromo compound, C_5H_9Br , formed by the addition of HBr to 2-pentyne respectively, is:

- A. 1 and 2
- B. 2 and 4
- C. 4 and 2
- D. 2 and 1

Answer: B



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426. when ethyl chloride and n-propyl chloride undergoes wurtz reaction which is not obtained.

- A. Butane
- B. Propane
- C. Pentane
- D. Hexane

Answer: B



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427. Ethyl chloride on heating with alcoholic potash gives:

- A. 1-Butene
- B. 1-Butanol
- C. 2-Butene

D. 2-Butanol

Answer: A

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428. Ozonolysis of 2,3-dimethyl-1-butene followed by reduction with zinc and water gives

A. Methanoic acid and 3-methyl-2-butanone

B. Methanol and 3-methyl-2-butanone

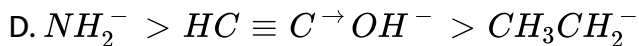
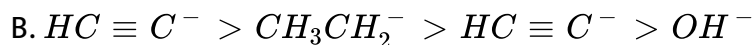
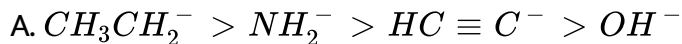
C. Methanol and 2-methyl-3-butanone

D. Methanoic acid and 2-methyl-3-butanone.

Answer: B

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429. The decreasing order of strength of the bases, OH^- , NH_2^- , $H-C \equiv C^-$ and $CH_3-CH_2^-$:

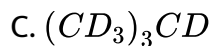
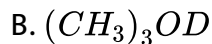
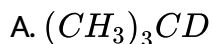


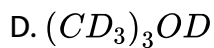
Answer: A



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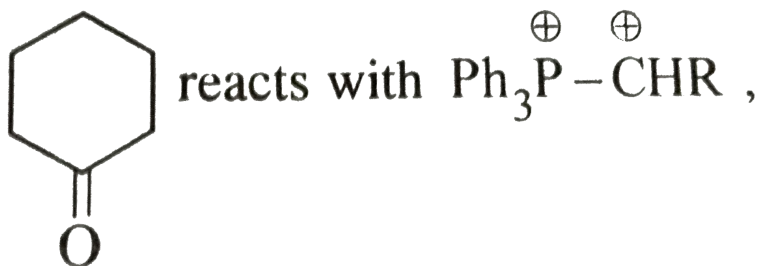
430. $(CH_3)_3CMgCl$ on reaction with D_2O produces





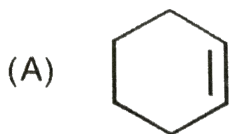
Answer: A

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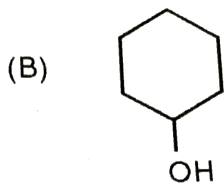


431. When

the product is

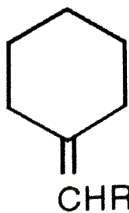


A.



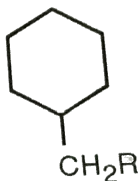
B.

(C)



C.

(D)



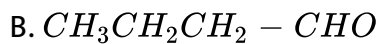
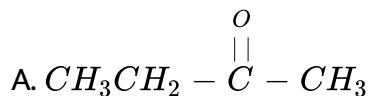
D.

Answer: B



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432. The product (*s*) via - oxymercuration ($HgSO_4 + H_2SO_4$) of 1 - butyne would be :





Answer: A

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433. Propyne and propene can be distinguished by :

A. *conc.* H_2SO_4

B. Br_2 in CCl_4

C. *dil.* H_2SO_4

D. $AgNO_3$ in ammonia

Answer: D

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

- A. Both are highly ionic
- B. one is oxidising, the other is reducing
- C. one of the step is endothermic in both the cases
- D. all the steps are endothermic in both the cases

Answer: C



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435. The reaction of propene with HOCl proceeds via the addition of :

- A. H^+ in the first step
- B. Cl^+ in the first step
- C. OH^- in the first step

D. Cl^+ and OH^- in a single step

Answer: B

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436. 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,

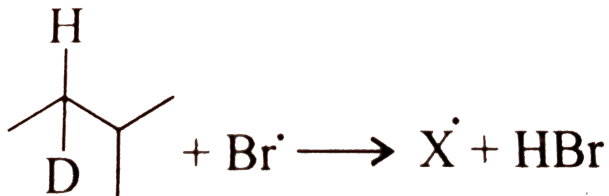
C. dilute H_2SO_4 , $HgSO_4$

D. ammonical Cu_2Cl_2

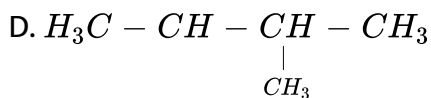
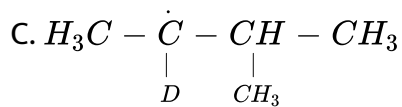
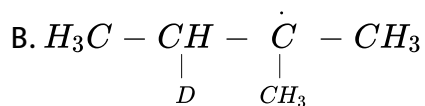
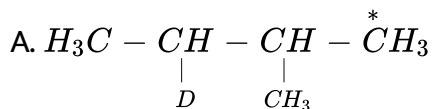
Answer: D

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437. Consider the following reaction:



Identify the structure of the major product X.

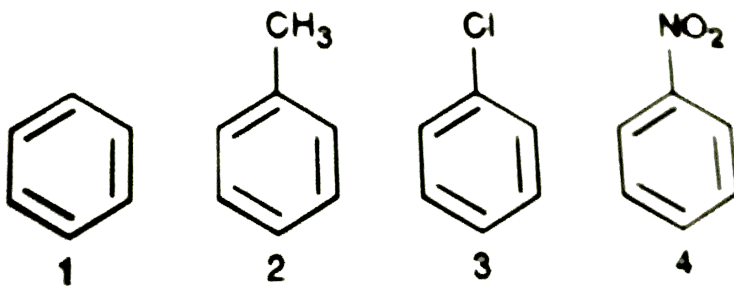


Answer: B



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438. Identify correct order of reactivity in electrophilic substitution reactions of the following compounds



A. $1 > 2 > 3 > 4$

B. $4 > 3 > 2 > 1$

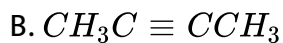
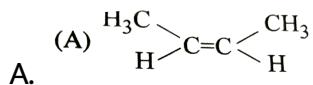
C. $2 > 3 > 1 > 4$

D. $2 > 1 > 3 > 4$

Answer: C

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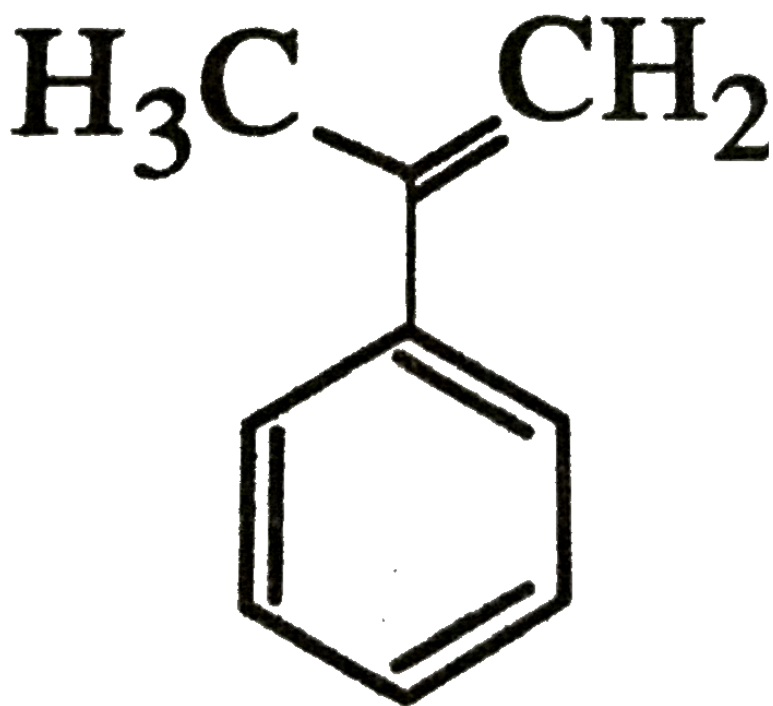
439. Which of the following hydrocarbons has the lowest dipole moment?



Answer: B



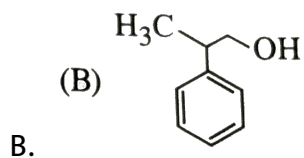
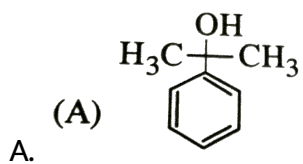
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440.

on acid

catalysed hydration gives



C. 

D. None of these

Answer: A

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441. The best method to prepare cyclohexene from cyclohexanol is by using

A. *conc. HCl + ZnCl₂*

B. *Conc. H₃PO₄*

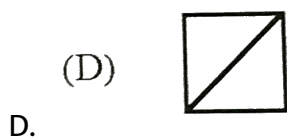
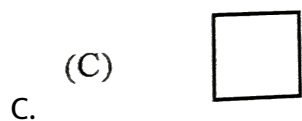
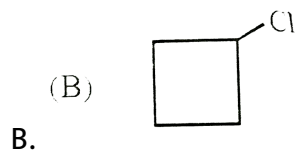
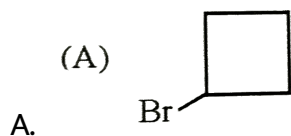
C. HBr

D. Conc.HCl

Answer: B

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442. What would be the product formed when 1-bromo-3-chlorocyclobutane reacts with two equivalents of metallic sodium in ether ? .



Answer: D



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443. The enthalpy of hydrogenation of cyclohexene is $-119.5 \text{ kJ mol}^{-1}$. If resonance energy of benzene is $-150.4 \text{ kJ mol}^{-1}$, its enthalpy of hydrogenation would be :

- A. $-358.5 \text{ kJ mol}^{-1}$
- B. $-509.9 \text{ kJ mol}^{-1}$
- C. $-208.1 \text{ kJ mol}^{-1}$
- D. $-269.9 \text{ kJ mol}^{-1}$

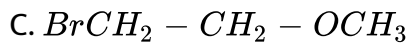
Answer: C



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444. HBr reacts with $\text{CH}_2 = \text{CH} - \text{OCH}_3$ under anhydrous conditions at room temperature to give:

- A. CH_3CHO and CH_3Br
- B. BrCH_2CHO and CH_3OH



Answer: D

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445. Phenyl magnesium bromide reacts with methanol to give:

A. Phenylmagnesium bromide and $Mg(OH)Br$

B. a mixture of benzene and $Mg(OH)Br$

C. a mixture of toluene and $Mg(OH)Br$

D. a mixture of phenol and $Mg(OH)Br$

Answer: B

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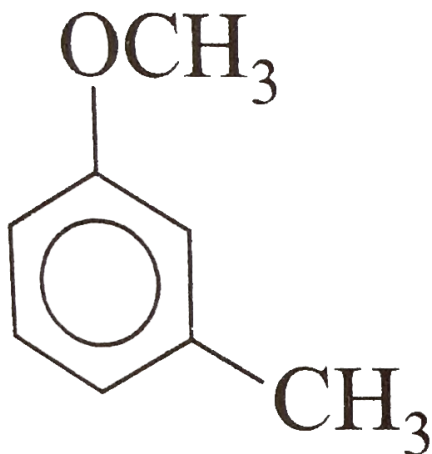
446. Increasing order of stability among the three main conformations (i.e. eclipse, anti, gauche) of ethylene glycol is :

- A. eclipse, anti, gauche
- B. anti, gauche, eclipse
- C. eclipse, gauche, anti
- D. gauche, eclipse, anti

Answer: A

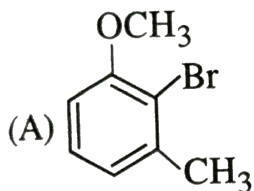


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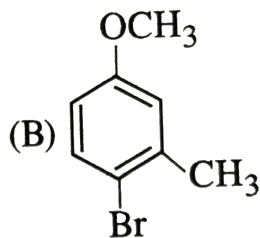


447.

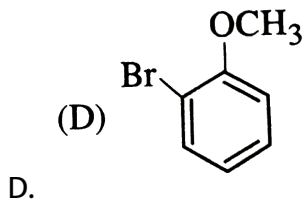
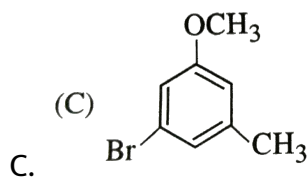
The major product formed on monobromination $\left(\frac{Br_2}{FeBr_3}\right)$ of the following compound. Is



A.



B.



Answer: B

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448. Trans-2-phenyl-1-bromocyclopentane on reaction with alcoholic KOH produces

A. 4-phenylcyclopentane

B. 2-phenylcyclopentane

C. 1-phenylcyclopentane

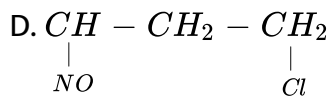
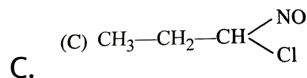
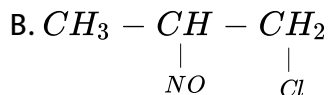
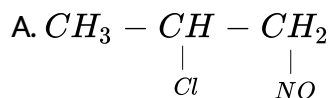
D. 3-phenylcyclopentane

Answer: D

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Identify the product.



Answer: A

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450. The order of decreasing reactivity towards an electrophilic reagent for the following,

(i). Benzene

(ii). Toluene.

(iii). Chlorobenzoic acid.

(iv). Phenol. Would.

A. $iv > ii > i > iii$

B. $i > ii > iii > iv$

C. $ii > ii > i > iii$

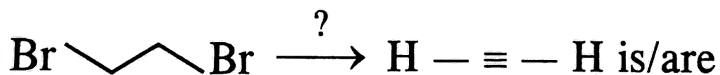
D. $iv > iii > ii > i$

Answer: A



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451. The reagents for the following conversion



- A. alcoholic KOH
- B. alcoholic KOH followed by NaNH_2
- C. aqueous KOH followed by NaNH_2
- D. $\text{Zn} / \text{CH}_3\text{OH}$

Answer: B



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452. The number of structural isomers for C_6H_{14} is :

- A. 3
- B. 4

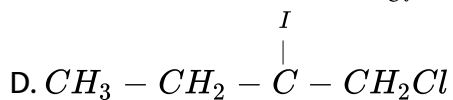
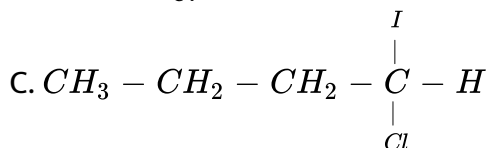
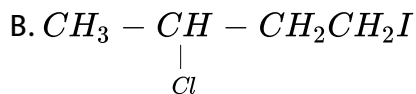
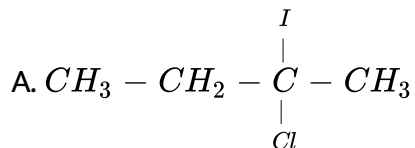
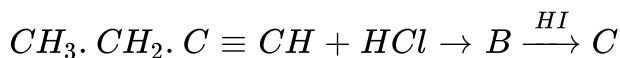
C. 5

D. 6

Answer: C

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453. The product C is



Answer: A



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454. Which of the compounds with molecular formula C_5H_{10} yields acetone on ozonolysis ?

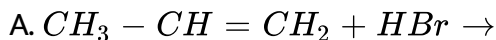
- A. 2-methyl-1-butene
- B. 2-methyl-2-butene
- C. 3-methyl-1-butane
- D. Cyclopentane

Answer: B



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455. Which of the following reactions will yield 2,2-dibromo propane?





Answer: B

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456. Presence of a nitro group in a benzene ring:

A. deactivates the ring towards electrophilic substitutions

B. activates the ring towards electrophilic substitution

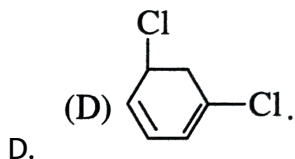
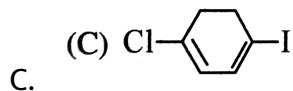
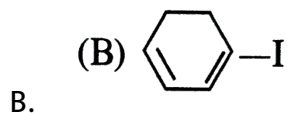
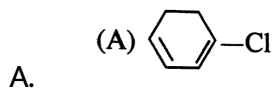
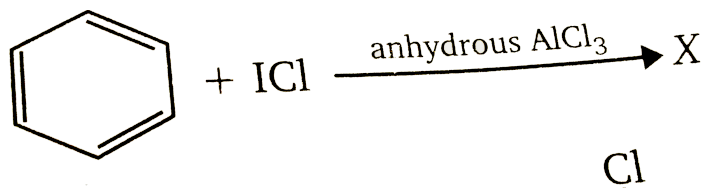
C. renders the ring basic

D. deactivates the ring towards nucleophilic

Answer: A

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457. The compound X in the reaction.



Answer: B



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458. The reaction of toluene with Cl_2 in presence of $FeCl_3$ gives predominantly

- A. benzyl chloride
- B. o and p-chlorotoluene
- C. m-chlorotoluene
- D. benzoyl chloride

Answer: B



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459. Base strength of

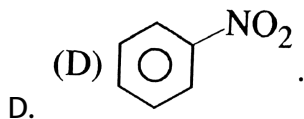
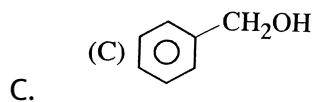
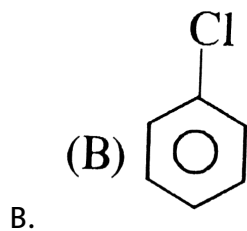
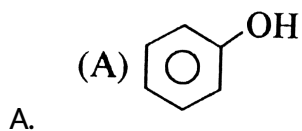
- A. $i > iii > ii$
- B. $i > ii > iii$
- C. $ii > i > iii$

D. $iii > ii > iii$

Answer: B

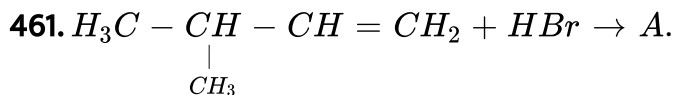
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460. Which one of the following is most reactive towards electrophilic attack ?

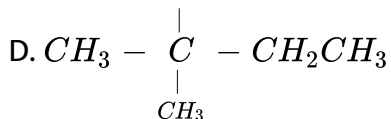
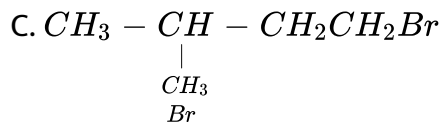
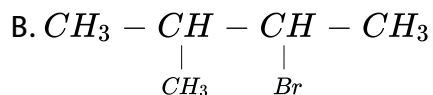
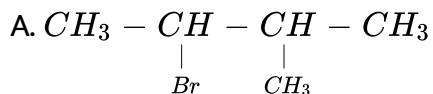


Answer: A

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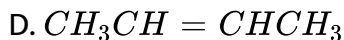
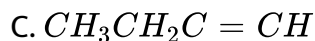
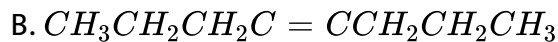
A is predominantly



Answer: D

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462. The hydrocarbon which can react with sodium in liquid ammonia is

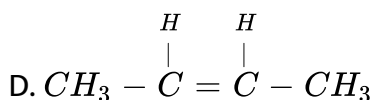
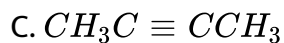
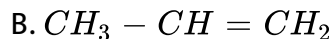


Answer: C



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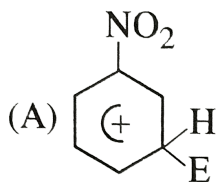
463. The treatment of CH_3MgX with $CH_3 - C \equiv C - H$ produces



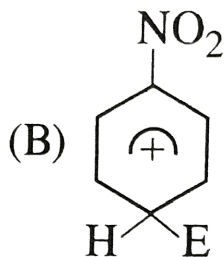
Answer: A

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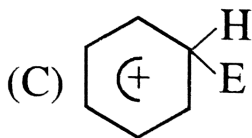
464. The electrophile, E^{\oplus} attacks the benzene ring to generate the intermediate σ -complex. Of the following which σ -complex is of lowest energy?



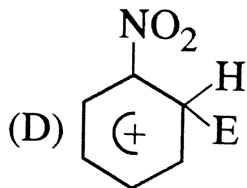
A.



B.



C.



D.

Answer: A

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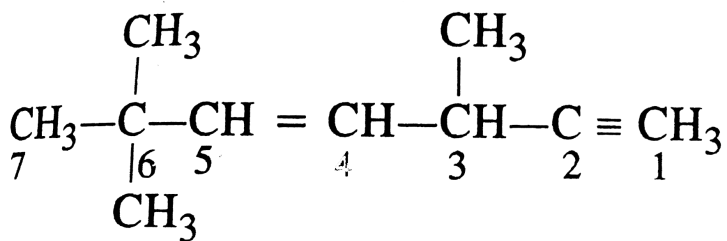
465. In the following sequence of reactions, the alkene affords the compound *B*:



The compound *B* is

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466. The state of hybridization of C_2 , C_3 , C_5 and C_6 of the hydrocarbons



is in the following sequence

- A. sp , sp^2 , sp^3 and sp^2
- B. sp , sp^3 , sp^2 and sp^3
- C. sp^3 , sp^2 , sp^2 and sp^2
- D. sp , sp^2 , sp^2 and sp^3

Answer: B



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467. Liquid hydrocarbon can be converted to a mixture of gaswous hydrocarbon by

- A. Cracking

B. Distillation under reduced pressure

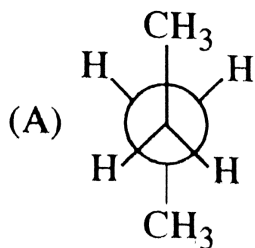
C. Hydrolysis of alkyl magnesium bromide

D. Oxidation

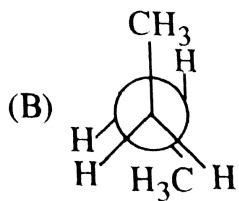
Answer: A

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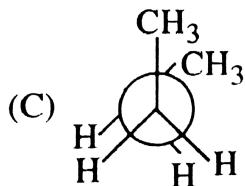
468. In the following the most stable conformation m-butane is:



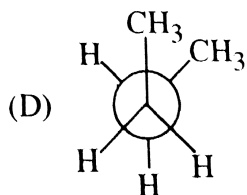
A.



B.



C.



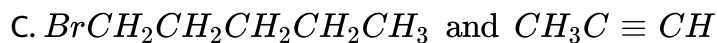
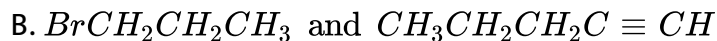
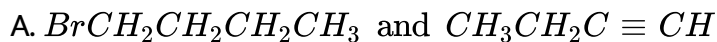
D.

Answer: A



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469. The synthesis of 3-octyne is achieved by adding a bromoalkane into a mixture of sodium amide and alkyne. The bromoalkane and alkyne, respectively, are

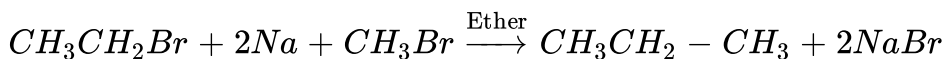
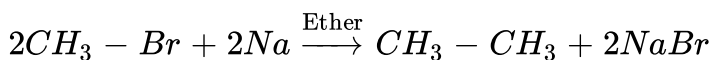
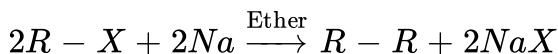


D. $BrCH_2CH_2CH_2CH_3$ and $CH_3CH_2C \equiv CH$

Answer: A

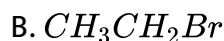
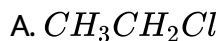
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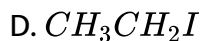
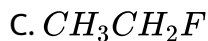
470. An ethereal solution of an alkyl halide preferably the bromide of iodide, is treated with sodium



In this reaction, the product has new (C-C) bond with the same type of alkyl halide, the product has symmetry and this helps in deciding the nature of reacting halide. Intermediates are free radicals

Formation of free radical is easiest in



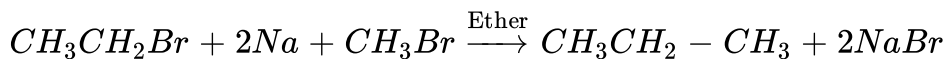
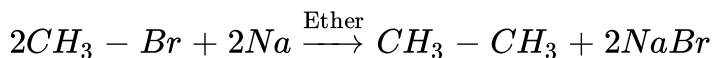
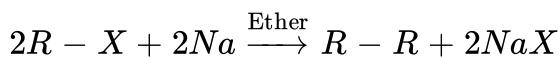


Answer: D



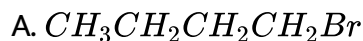
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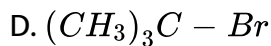
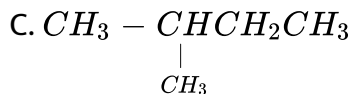
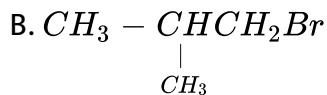
471. An ethereal solution of an alkyl halide preferably the bromide of iodide, is treated with sodium



In this reaction, the product has new (C-C) bond with the same type of alkyl halide, the product has symmetry and this helps in deciding the nature of reacting halide. Intermediates are free radicals

Formation of free radical takes place with absorption of minimum energy in



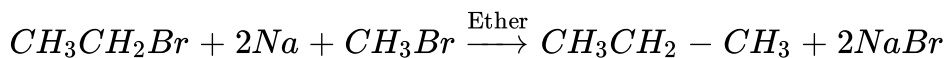
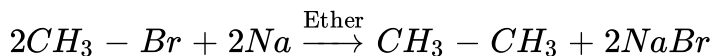
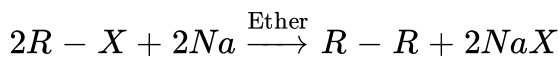


Answer: D



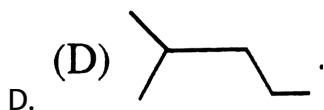
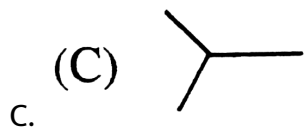
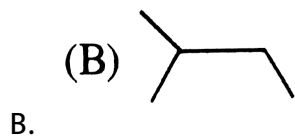
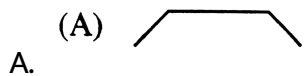
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472. An ethereal solution of an alkyl halide preferably the bromide of iodide, is treated with sodium



In this reaction, the product has new (C-C) bond with the same type of alkyl halide, the product has symmetry and this helps in deciding the nature of reacting halide. Intermediates are free radicals

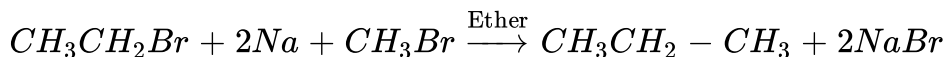
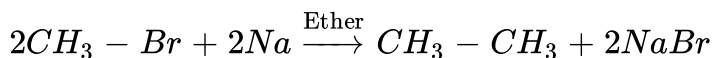
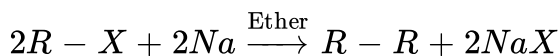
Which of the followin can be obtained in good yield by Wurtz reactions



Answer: A

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473. An ethereal solution of an alkyl halide preferably the bromide or iodide, is treated with sodium



In this reaction, the product has new (C-C) bond with the same type of

alkyl halide, the product has symmetry and this helps in deciding the nature of reacting halide. Intermediates are free radicals

CH_3CH_2Br undergoes Wurtz reactions. We may expect some of the following products as

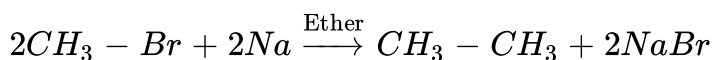
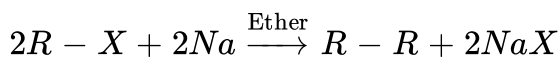
- A. only a
- B. a and b
- C. a,b,c
- D. a and c

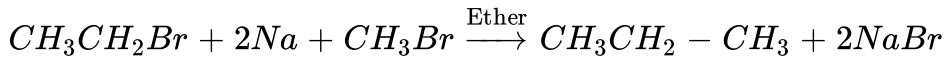
Answer: C



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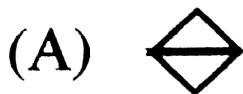
474. An ethereal solution of an alkyl halide preferably the bromide of iodide, is treated with sodium





In this reaction, the product has new (C-C) bond with the same type of alkyl halide, the product has symmetry and this helps in deciding the nature of reacting halide. Intermediates are free radicals

1-Bromo-3-chloro cyclobutane combines with Na/ether to yield



A.



B.



C.



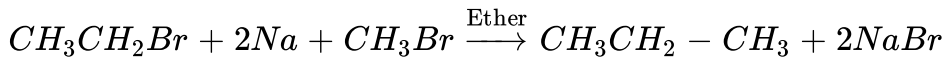
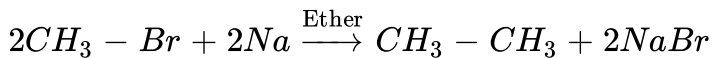
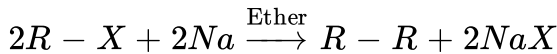
D.

Answer: C

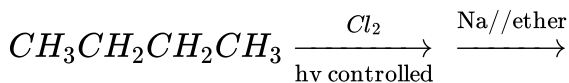


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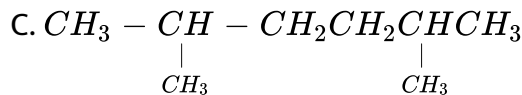
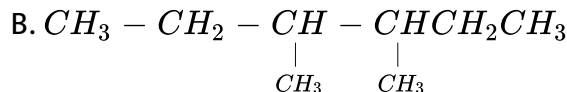
475. An ethereal solution of an alkyl halide preferably the bromide of iodide, is treated with sodium



In this reaction, the product has new (C-C) bond with the same type of alkyl halide, the product has symmetry and this helps in deciding the nature of reacting halide. Intermediates are free radicals



Major product of the above reaction is



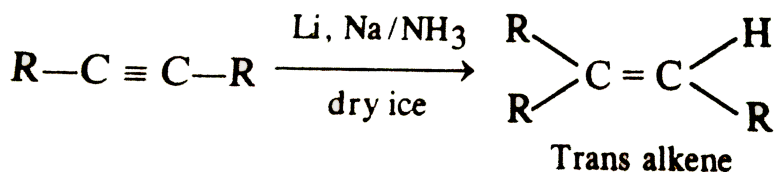
D. None of these

Answer: B

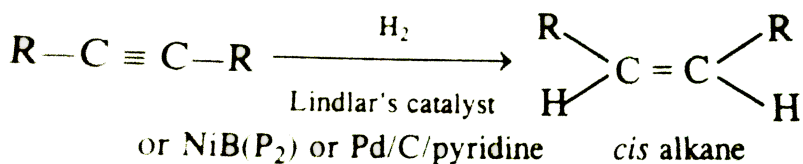


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476. Reduction of an alkyne to the double bond stage can yield a cis alkene or trans alkene (except in cases where triple bond is at the end of the chain) Reduction of alknes with sodium or lithium in liquid NH_3 yields predominantly trans alkene.



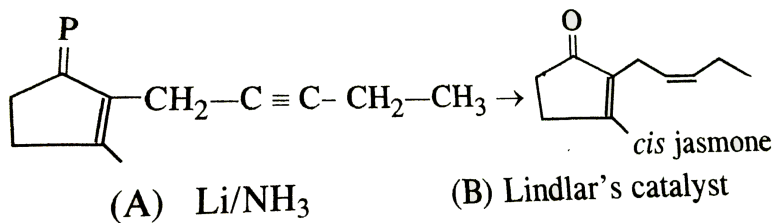
Hydrogenation of alkynes with Lindlar's catalyst or a nickel boride called P_2 catalyst yeilds is alkene (as high as 98%)



If $Pd/C/H_2$ is used in the absence of a catalyst poison, two equivlanet of H_2 are added forming alkanes.

Shown below is the first step in hte synthesis of hte important perfume constituent, cis-Jasmone which reagents you choose to carry out this

last step?



A. Li / NH_3

B. Lindlar's catalyst

C. $\text{Na} / \text{C}_5\text{H}_5\text{OH}$

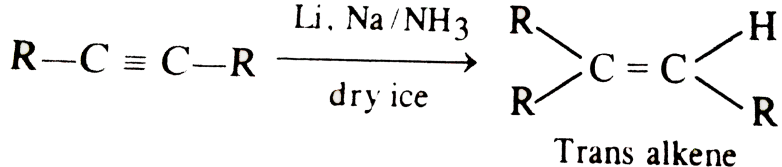
D. Pt / H_2

Answer: B

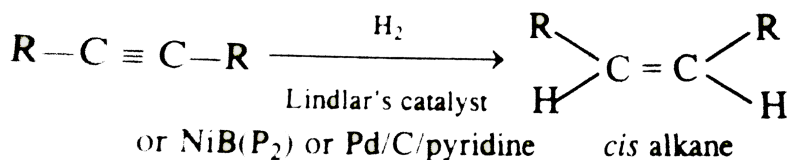


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477. Reduction of an alkyne to the double bond stage can yield a cis alkene or trans alkene (except in cases where triple bond is at the end of the chain) Reduction of alknes with sodium or lithium in liquid NH_3 yields predominantly trans alkene.



Hydrogenation of alkynes with Lindlar's catalyst or a nickel boride called P_2 catalyst yields cis-alkene (as high as 98%)



If $Pd/C/H_2$ is used in the absence of a catalyst poison, two equivalents of H_2 are added forming alkanes.

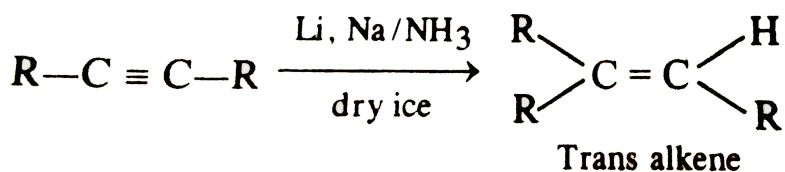
Lindlar's catalyst can be prepared by precipitating palladium calcium carbonate and treating it with lead acetate or quinoline. This treatment is

- A. partially deactivates the catalyst which causes reduction of alkyne to alkene
- B. increases the rate of hydrogenation
- C. selectively gives only cis-isomer
- D. selectively gives trans-isomer

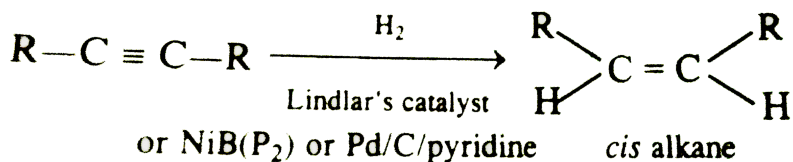
Answer: C

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478. Reduction of an alkyne to the double bond stage can yield a cis alkene or trans alkene (except in cases where triple bond is at the end of the chain) Reduction of alknes with sodium or lithium in liquid NH_3 yields predominantly trans alkene.



Hydrogenation of alkynes with Lindlar's catalyst or a nickel boride called P_2 catalyst yeilds is alkene (as high as 98%)



If $\text{Pd/C}/\text{H}_2$ is used in the absence of a catalyst poison, two equivlanet of H_2 are added forming alkanes.

Reduction of alkynes to trans alkene by Li/NH_3 is carried out in the presence of dry ice. This is because of

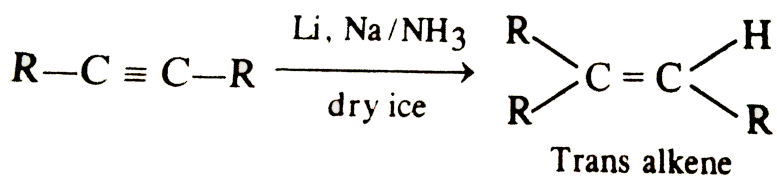
- A. radical anion is formed at the temperature of dry ice
- B. intermediate if formed with dry ice
- C. NH_3 remains in liquid state at the temperature of dry ice
- D. Li remains in liquid state at the temperature of dry ice

Answer: C



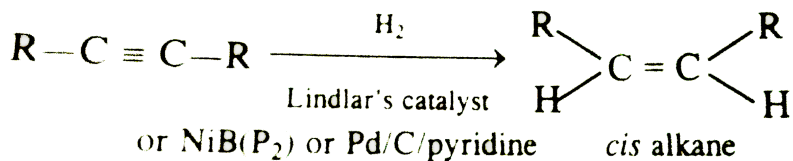
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479. Reduction of an alkyne to the double bond stage can yield a cis alkene or trans alkene (except in cases where triple bond is at the end of the chain) Reduction of alkynes with sodium or lithium in liquid NH_3 yields predominantly trans alkene.

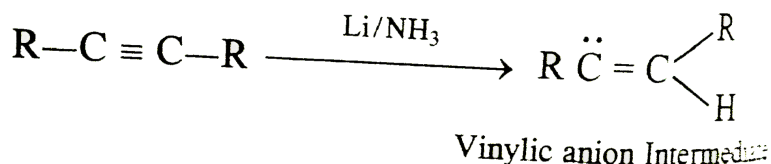


Hydrogenation of alkynes with Lindlar's catalyst or a nickel boride called

P_2 catalyst yields cis alkene (as high as 98%)



If Pd/C/H_2 is used in the absence of a catalyst poison, two equivalents of H_2 are added forming alkanes.



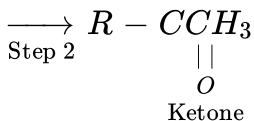
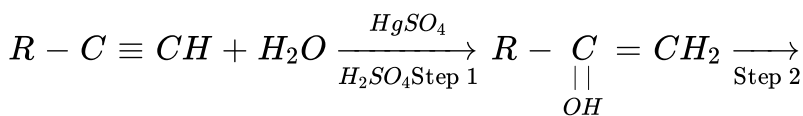
Select the correct statement(s)

- A. Trans form of vinylic anion is more stable
- B. cis form of vinylic anion is more stable
- C. Rate determining step occurs prior to the step in which vinylic anion reacts
- D. Rate determining step occurs after vinylic anion has reacted

Answer: A

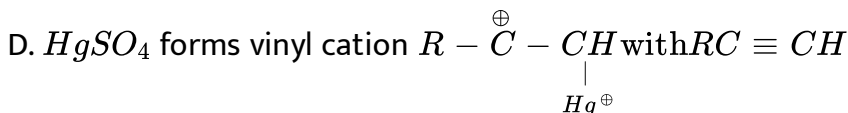
480. Alkynes undergo acid catalysed addition of water across the triple bond in the presence of mercuric ion as catalyst. A mixture of $HgSO_4$ and aqueous H_2SO_4 is used and addition product follows

Markownikoff's rule



Select the correct statement(s)

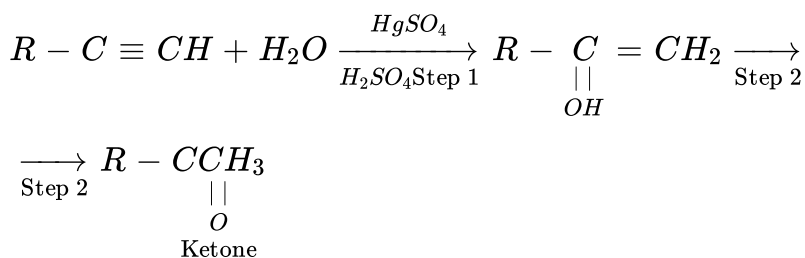
- A. Enol form is the hydration of alkyne is called vinyl alcohol
- B. Conversion of enol to ketone (step 2) is called tautomerisation and enol and ketone are called tautomer
- C. Step 2 is acid catalysed



Answer: A,B,C,D

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481. Alkynes undergo acid catalysed addition of water across the triple bond in the presence of mercuric ion as catalyst. A mixture of $HgSO_4$ and aqueous H_2SO_4 is used and addition product follows Markownikoff's rule



Hydration of 2-pentyne by a mixture of $HgSO_4$ and H_2SO_4 forms

- A. 2-pentanone
- B. 3-pentanone
- C. both A and B
- D. None of these

Answer: C

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- | | Column I | Column II |
|------|--------------------------------|-------------|
| | (A) Koldbe's electrolysis | (p) Alkenes |
| 482. | (B) Ozonolysis | (q) Alkenes |
| | (C) Electrophilic substitution | (r) Alkynes |
| | (D) Electrophilic addition | (s) Arenes |

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483. Match the Column-I to Column-II :

- | Column I | | Column II |
|---|--|---|
| (A) $\text{CH}_3\text{CHBrCHBrCH}_3$ | $\xrightarrow{\text{Zn}/\text{CH}_3\text{OH}}$ | p $\text{CH}_3\text{CH}_2\text{CH}=\text{CH}_2$ |
| (B) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$ | $\xrightarrow[\text{Conc H}_2\text{SO}_4]{\Delta}$ | q $\text{CH}_3\text{CH}=\text{CHCH}_3$ |
| (C) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl}$ | $\xrightarrow[\Delta]{\text{Alc KOH}}$ | r Carbocation |
| (D) $\text{CH}_3\text{CH}_2\text{CHClCH}_3$ | | s E_2 elimination |

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484. Assertion(A): Alkanes can have an infinite number of conformations

Reason(R):In configurational isomeris,the isomers are distinct individuals substances.

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485. Assertion(A): Benzene is obviously an unsaturated hydrocarbon because it has for less hydrogen than the equivalent saturated hydrocarbon C_6H_{14} , but benzene is too stable to be an alkene.

Reason:Benzene is resonance stabilised.

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486. Assertion(A):The octane number compare gasoline's tendency to knock against the tendency of a blend of two standard hydrocarbon, heptane and isooctane.

Reason: The gasoline that matches a blend of 87%, 2,2,4-dimethylpentane and 13% heptane is given an octane number 13.

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487. Assertion : Acetylene on reacting with sodamide gives sodium acetylide and ammoniac.

Reason: sp – hybridised carbon atoms of acetylene are considerably electronegative.

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488. Assertion(A):The boiling point of n-alkanes regularly with the increase in the number of carbon atoms.

Reason: The magnitude of van der Waal's forces increases with increase in molecular mass and molecular size.

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489. Assertion(A):Cyclobutane is less stable than cyclopentane.

Reason: The bond angles in cyclobutane and cyclopentane are 90° and 108° respectively and angel strain decreases.

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490. Assertion(A): A solution of bromine in CCl_4 is decolourised on passing acetylene gas through it.

Reason Bromine is expelled from the solution by the acetylene gas.

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491. Assertion(A):Benzene does not show electrophilic addition reaction:

Reason Benzene is a cyclic unsaturated hydrocarbon.

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492. Assertion(A): $CH_3C \equiv CH$ is more than $CH_3CH = CH_2$

Reason: sp -carbon is more electronegative than sp^2 carbon

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493. Assertion(A): Both toluene and isopropyl benzene give the same product on oxidation with $KMnO_4$.

Reason $KMnO_4$ oxidises side aliphatic chain of arenes to $-COOH$ group

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494. Assertion(A): Acetylene and sodamide react to give dihydrogen gas.

Reason: Acetylene is a very very feeble acid.

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495. Assertion(A):Both cyclopropane and propene give addition reactions readily.

. Reason Cyclopropane and propene are isomers of each other.

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496. Assertion : Propene reacts with HBr in presence of benzoyl peroxide to yield 1 – bromopropane.

Reason : In presence of peroxide , the addition of HBr to propene follows ionic mechanism.

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497. Assertion(A):Treatment of 1,3-dibromopropane with zinc produces cyclopropane.

Reason: The reaction of alkyl halides with zinc metal is termed as CoreyHouse reaction.

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498. Assertion: Addition of Br_2 to 1-butane gives two optical isomers.

Reason: The product contains one asymmetric carbon atoms.

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499. Assertion(A):The nitrating reagent for carrying out nitration of benzene contains conc. H_2SO_4 and conc. HNO_3 .

Reason: In the presence of conc. H_2SO_4 , HNO_3 acts as a base and produces NO_2^+ ions.

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500. Assertion(A):Benzene and Cl_2 react in the presence of light to give BHC.

Reason: BHC is called gammexene or 666



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501. Assertion(A):In Kolbe's electrolytic carboxylation reaction if there are n carbon atoms in the parent compound, the alkane produced will have $(n-1)$ carbon atoms.

Reason: Kolbe's electrolytic decarboxylation reaction can also be employed for producing ethene and ethyne.



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502. Assertion(A):Ethene is more reactive than propene towards electrophilic attack.

Reason: Propyne is stabilised by hyperconjugation effect.



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503. Assertion(A):But-2-yne on treatment with $Na/NH_3(l)$ produces trans-2-butene.

Reason: In but-yne all the atoms are linear.

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504. Assertion(A):Ethyne reacts with NH_3 to form pyrrole.

Reason: Pyrrole is a heterocyclic aromatic compound.

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505. Assertion(A):Propene reacts with perbenzoic acid to form 1,2-epoxy propane.

Reason: Perbenzoic acid contains a peroxide linkage (O-O) in its molecule.

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506. Assertion(A):Butane-2 is more stable than butene-1.

Butene-2 has 6H-C bonds while butene-1 has 2H-C bonds.

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507. Assertion(A):Tertiary butyl alcohol is more reactive towards dehydration in compariso to primary alcohol.

Reason: Secondary carbonium ion is more stable than primary carbonium ion.

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508. Assertion(A):2-Bromobutane on reaction with sodium ethoxide. In ethanol gives 1-butene as a major product.

Reason: 1-Butene is more stable than-2-butene

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509. Tertiary alcohols are dehydrated by using boiling dilute H_2SO_4 and not con. H_2SO_4 because

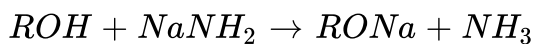
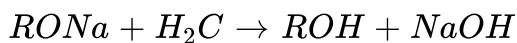
- A. with conc. H_2SO_4 tertiary alcohol gives mixture of isomeric alkenes
- B. with conc. H_2SO_4 most substituted alkene is obtained
- C. with con.c H_2SO_4 alkenes formed undergo polymerisation.
- D.

Answer: C

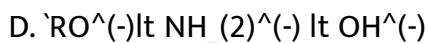
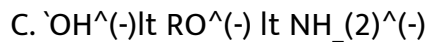


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510. Consider the following reaction



Predict which of the following order regarding base strength is correct.



Answer: C



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511. Which of the following hydrocarbons is obtained when 1, 1-dibromopropane is treated with sodium in ether solution?

A. Propene

B. Propane

C. Propyne

D. Hex-3-ene

Answer: D

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512. Each of the following compounds is an aromatic except

A. benzene

B. naphthalene

C. cyclopentadienyl cation

D. cyclopentadienyl anion

Answer: C

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513. Oxidation of isobutane with potassium

A. CO_2 and H_2O

B. t-Butanol

C. Butanoic acid

D. Propanoic acid.

Answer: B

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514. Which of the following is fier damp

A. Ethane

B. Ethyne

C. Methane

D. Propane.

Answer: C

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515. The dehydration of 2 – Methyl butanol with conc. H_2SO_4 gives

- A. 2-methylbutane as the major product
- B. 2-methylbut-2-ene as the major product
- C. pentane
- D. pent-2-ene

Answer: B



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516. In the reaction given below, X is



- A. 2 Methylpentane
- B. 2-Methylpent-2-ene

C. 2-Methyl-2-butene

D. None of these

Answer: C

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517. In chlorobenzene the Cl group

A. activates the benzene ring more via resonance effect than deactivating it via inductive effect

B. deactivates the benzene ring more via inductive effect than deactivating it via resonance effect

C. activates the benzene ring via resonance effect and deactivates it via inductive effect. Both these effects are evenly matched

D. is a net deactivating group with meta directing influence.

Answer: C



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518. The major product obtained in the photobromination of 2-methylbutane is

- A. 1-Bromo-2-methylbutane
- B. 1-Bromo-3-methylbutane
- C. 2-Bromo-3-methylbutane
- D. 2-Bromo-2-methylbutane

Answer: D



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519. Which of the following gives m-nitro compound on nitration except

A. o-Xylene

B. m-Xylene

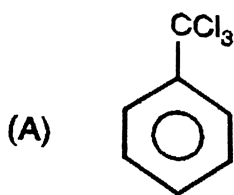
C. p-Xylene

D. All at the same rate

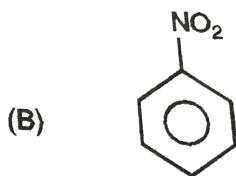
Answer: B

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520. Each of the following gives a m-nitro compound on nitro except

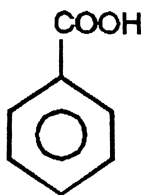


A.

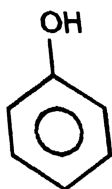


B.

(C)
C.



(D)
D.



Answer: D

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521. Nitrobenzene can be prepared from benzene by using a mixture of conc. HNO_3 and conc. In the nitrating mixture, HNO_3 acts as a/an

A. base

B. acid

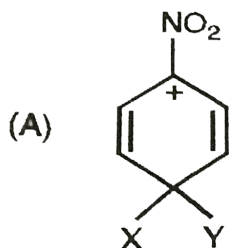
C. reducing agent

D. catalyst

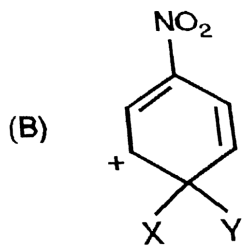
Answer: A

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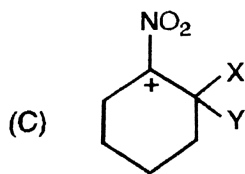
522. Which of the following is most stable carbocation.



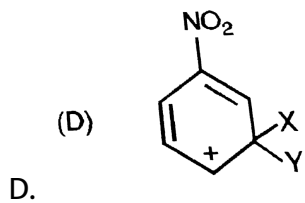
A.



B.



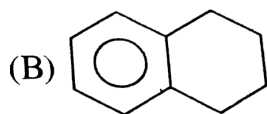
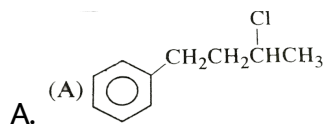
C.



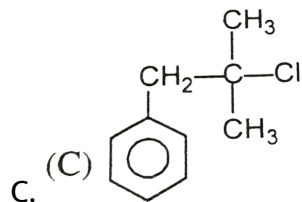
Answer: D

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523. Identify the compound *X*



B.



D. None of these

Answer: A

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524. The monochlorination of an alkene (molecular formula C_8H_{18}) gives only one product. The IUPAC name is

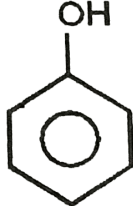
- A. n-Octane
- B. Isooctane
- C. 2,2,3,3-Tetramethylbutane
- D. 2,2,3-Trimethylpentane.

Answer: C

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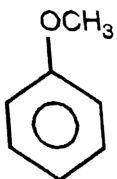
525. Each of the following compounds gives a Friedel Crafts alkylation except

(A)



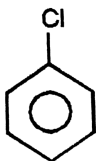
A.

(B)



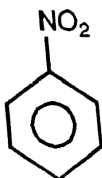
B.

(C)



C.

(D)



D.

Answer: D



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526. Bromination of n-butane gives

- A. 1-bromobutane as the major product
- B. 2-bromobutane as the major product
- C. both 1-bromo and 2-bromobutane with equal percentage
- D. both 1-bromo and 2-bromo products whose percentage depends on temperature

Answer: B



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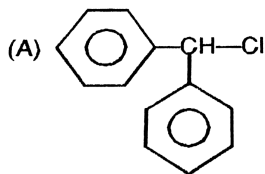
527. $C_2H_5CO_2^- Na + \xrightarrow{\Delta} X$. X is

- A. C_2H_6 only
- B. a mixture of C_2H_4 and C_2H_6
- C. C_2H_4 only
- D. None of these

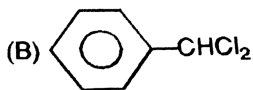
Answer: B

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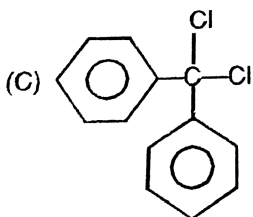
528. Which one of the following structures is the structure of the compound formed when benzene reacts with dichloromethane in the presence of anhydrous $AlCl_3$?



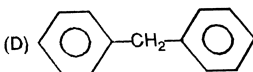
A.



B.



C.



D.

Answer: D

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529. The addition of 41.2mg of an unknown alcohol ROH to CH_3MgI releases 1.56mL of a gas at STP. The molar mass of the gas is

A. 32 g mol^{-1}

B. 46 g mol^{-1}

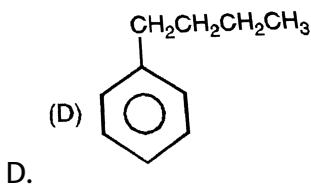
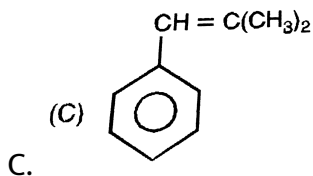
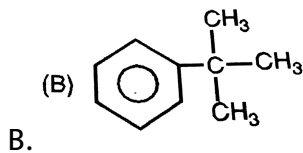
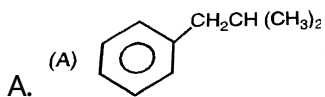
C. 59 g mol^{-1}

D. 74 g mol^{-1}

Answer: C

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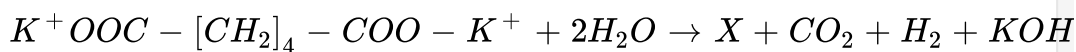
530. Alkylation of benzene with isobutene in the presence of sulphuric acid gives



Answer: B

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531. The compounds X in the following reaction is



The equation is unbalanced

A. n-butane

B. n-Octane

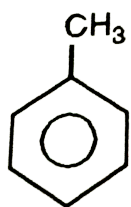
C. Cyclobutane

D. Butane

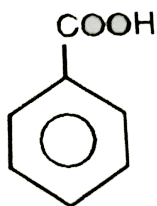
Answer: C

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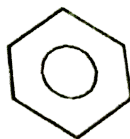
532. Which of the following order is correct for the decreasing reactivity to ring monobromination of the following compounds?



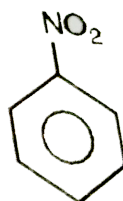
I



II



III



IV

A. $I > II > III > IV$

B. $I > III > II > IV$

C. $II > III > IV > I$

D. $III > I > III > IV$

Answer: B

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533. During the preparation of ethane by Kolbe's electrolytic method using inert electrode the pH of the electrolyte

A. increases progressively as the reaction proceeds

B. decreases progressively as the reaction

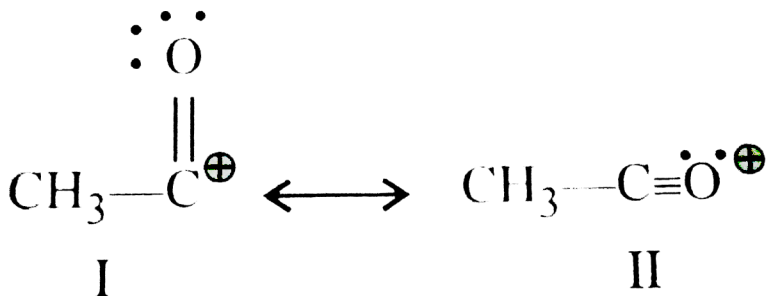
C. remains constant throughout the reaction

D. may decrease if the concentration of the electrolyte is not very high.

Answer: A

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534. Which of the following statements is correct?



A. I is more stable than II

B. II is less stable than I because positive charge is present on more electronegative oxygen.

C. II is more stable than I due to the presence

D. II is more stable than I because each atom has 8 electrons in its valence shell

Answer: D



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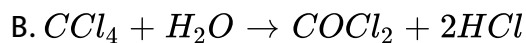
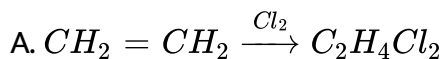
535. The hydrogen atoms attached to carbon atoms joined directly to a benzen ring are called

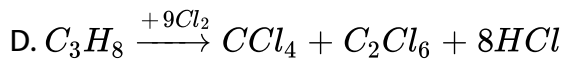
- A. benzyl hydrogens
- B. benzyl hydrogens
- C. benzylic hydrogens
- D. benzotic hydrogens

Answer: D

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536. An example of chlorinolysis is





Answer: D

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537. In the reaction of p-chlorotoluene with KNH_2 in liquid NH_3 the major product is .

- A. o-toluidine
- B. m-toluidine
- C. p-toluidine
- D. p-chloroaniline

Answer: B

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538. Methyl bromide when heated with zinc in a closed tube produces

A. methane

B. ethane

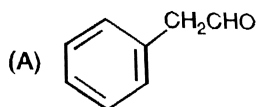
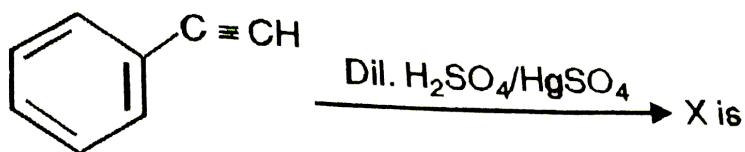
C. ethyne

D. methaol

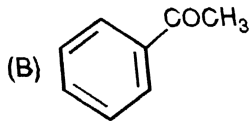
Answer: B

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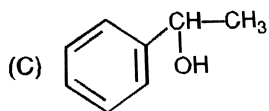
539. The compounds X in the following reaction



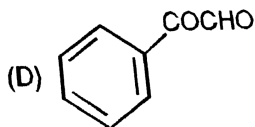
A.



B.



C.



D.

Answer: B

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540. Which of the following alkyl halides on conversion into the Grignard reagent followed by treatment with water would yield 2-methylbutane

A. 2-Chloro-2-methylbutane

B. 1-Chloro-2-methylbutane

C. 2-Chloro-3-methylbutane

D. All of them

Answer: D

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541. How many isomeric bromides having formula $C_{16}H_{13}Br$ on conversion into reagent followed by treatment with water would yield 2,3-dimethylbutane?

A. 1

B. 2

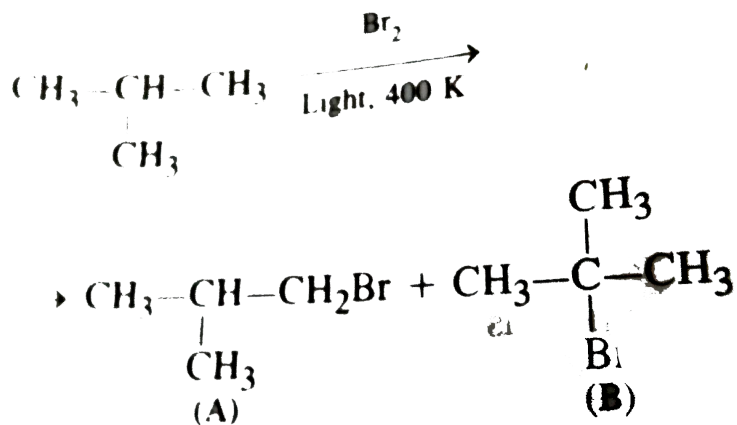
C. 3

D. 4

Answer: B

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542. Consider the following reaction



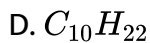
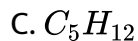
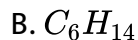
Which of the following is true?

- A. Compound A is formed in much larger equal amounts
- B. Compound A is formed in much larger equal proportions
- C. Compound B is formed in much larger equal amounts
- D. Relative amount of the two cannot be predicted

Answer: C

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543. Which of the following compounds has the highest heat of combustion?



Answer: D



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544. Which of the following alkene has the maximum value of hydrogenation

A. Ethane

B. Propane

C. 1-Butene

D. trans-2-Butene

Answer: A

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545. The relationship between acetylene and benzene is comparable to the relationship between propyne and

A. Xylene

B. Neoprene

C. Mesitylene

D. Propylbenzene

Answer: C

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546. A hydrocarbon of formula C_6H_{12} on ozonolysis gives one carbonyl product which does not reduce Fehling's solution. The hydrocarbon is

- A. 3-Hexane
- B. 2,3-Dimethyl-2-butene
- C. 2-Methyl-2-pentene
- D. 2-Hexane

Answer: B

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547. A hydrocarbon of formula C_6H_{12} decolourises bromine water. It also gives precipitate with ammonical $AgNO_3$ solution. The hydrocarbon is

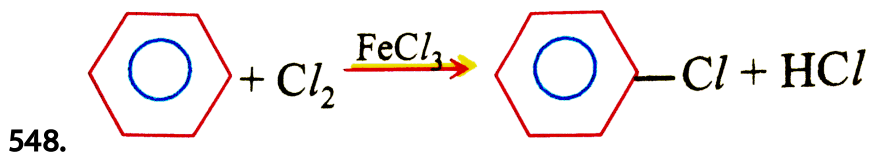
- A. 1,3,5-Cyclohexatriene
- B. 1,5-Hexadiyne

C. 2,4-Hexadiyne

D. None of these

Answer: B

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In the reaction The attacking species is

A. Cl_2

B. Cl^+

C. Cl^-

D. $FeCl_4^-$

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549. Ozonolysis of p-xylene gives

- A. Glyoxal
- B. Methyl glyoxal
- C. Both of these
- D. None of these

Answer: C

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550. During the electrophilic substitution of benzene, the intermediate species involved is

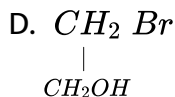
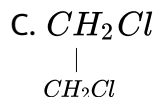
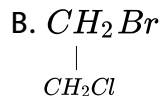
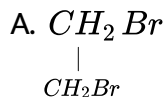
- A. Carbanion
- B. Carbocation
- C. Free radical

D. None of these

Answer: B

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551. Ethene is shaken with aqueous solution of Br_2 and $NaCl_2$. Which of the following is not the possible product?



Answer: C

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552. Which of the following reaction can be employed for getting unsymmetrical alkanes in good yield?

- A. Wurtz reaction
- B. Corey House reaction
- C. Both
- D. None.

Answer: B

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553. The reduction of 1,3-pentadiene with sodium in liquid ammonia in the presence of an alcohol gives

- A. pentane
- B. 2-pentene

C. 1-pentane

D. propene+ethene

Answer: B

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554. But-2-yne on reaction with sodium in liquid ammonia produces

A. butyne

B. trans-2-butene

C. cis-2-butene

D. no reaction

Answer: B

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555. Hydrolysis of calcium carbide gives a solution with Ph

A. 7

B. > 7

C. < 7

D. 0

Answer: B



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556. The addition of O_2 gas to a reaction mixture of CH_4 and Cl_2 undergoing photochlorination will

A. acceleration the reaction

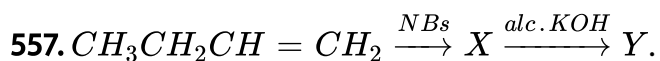
B. retards the reaction for some time

C. does not effect the rate of reaction

D. slows down the rate of reaction permanently

Answer: B

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The compound Y is

A. But-2-en-2-ol

B. But-3-en-1-ol

C. 1,3-Butadiene

D. 1,2-Butadiene

Answer: C

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558. An alkene has molecular mass in the range of 80-85. A 10.02mg of its sample took up 8.4mL of H_2 gas measured at $0^\circ C$ and 760 mm pressure. Upon ozonolysis it yielded glyoxal and methanol. The alkene is

- A. Hexane-1
- B. Hexyne-1
- C. 1,3-Hexadien
- D. 1,3,5-Hexatriene

Answer: D



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559. Neopentyl bromide is heated with an alcoholic KOH solution. The major alkene formed is

- A. 2-Methyl-1-butene
- B. 2-Methyl-2-butene

C. 2,2-Dimethyl-1-proanol

D. 2-Methyl-2-butanol

Answer: B

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560. Which of the following can forms metallic derivatives by replacement of H-atoms?

A. Ethane

B. Methane

C. 2-Butyne

D. 1-Pentyne

Answer: D

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561. Acetylene can be converted into methyl vinyl ether on reaction with

- A. Vinyl alcohol
- B. Methyl alcohol
- C. Dimethyl ether
- D. Methanol

Answer: B



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562. 1,1-Dibromoethane when heated with zinc dust produces

- A. Ethyl bromide
- B. Ethene
- C. Vinyl bromide
- D. 2-Butene

Answer: D

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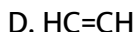
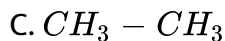
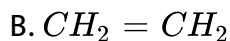
563. Propene can be converted into 1-propanol by

- A. Hydration
- B. Hydroboration oxidation
- C. Reaction with alkaline $KMnO_4$
- D. Reaction with dil. NaOH solution.

Answer: B

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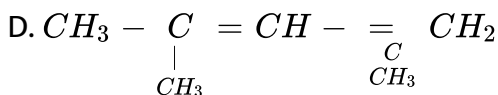
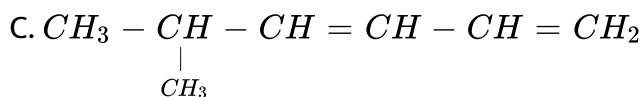
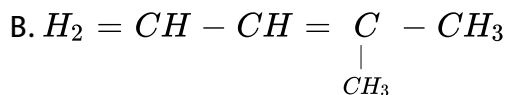
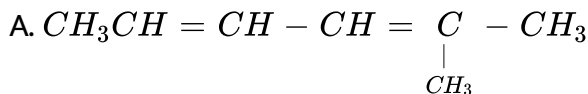
564. Combustion of which of the following compounds (in the presence of excess of oxygen) does not result in the change in the hybrid state of carbon atom?



Answer: D

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565. A compound on ozolysis gives glyoxal, acetone and formaldehyde as the products. The compound would be



Answer: B

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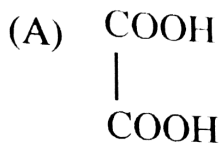
566. Reaction of ethyne with HCN in the presence of $Ba(CN)_2$ is

- A. electrophilic addition reaction
- B. nucleophilic addition reaction
- C. free radical addition reaction
- D. electrophilic substitution reaction.

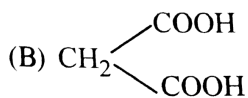
Answer: B

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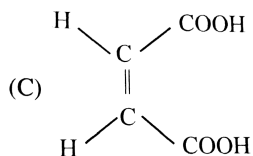
567. Which of the following organic acid decolourises bromine water as well as forms anhydride ?



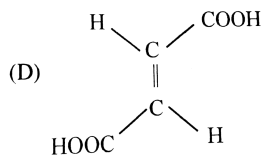
A.



B.



C.



D.

Answer: C



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568. When an alkene reacts with a peracid, the product is

A. Alkane

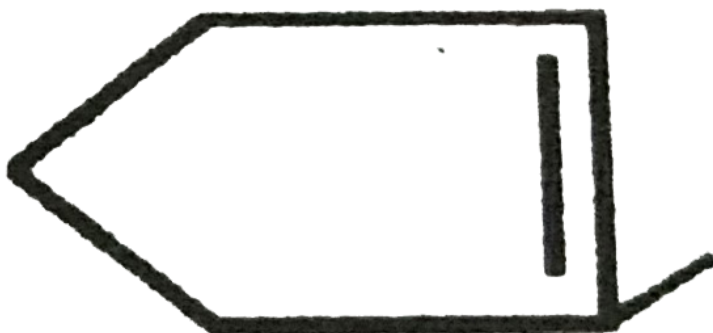
B. Alkyne

C. Epoxide

D. None of these

Answer: C

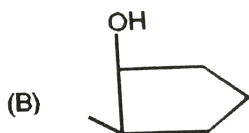
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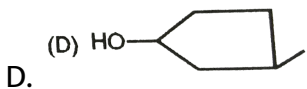
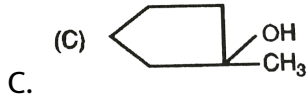
569. When
undergoes oxymercuration demercuration, the product is



A.

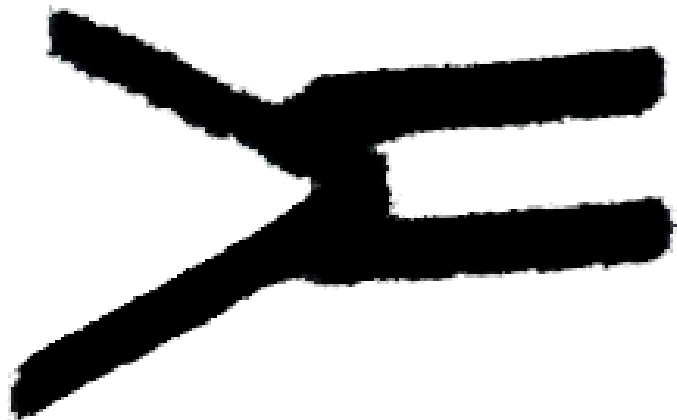


B.



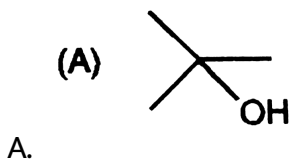
Answer: C

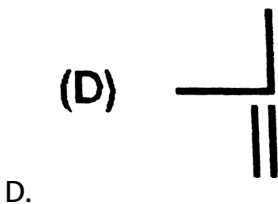
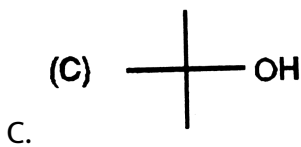
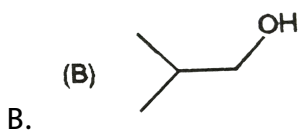
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570. When

reacts with mercuric acetate and then with $NaBH_4$ the product is

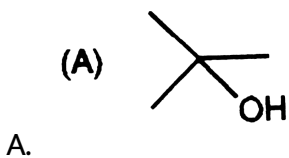


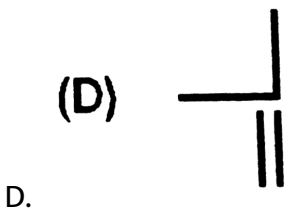
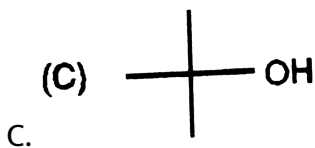
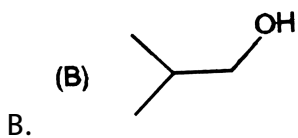


Answer: A

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571. When isobutylene reacts with dibromane followed by reaction with H_2O_2 , the product is

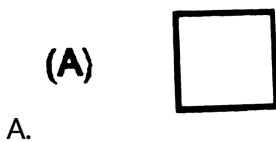




Answer: B

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572. What is A in the following reaction

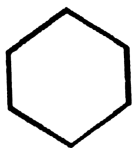


(B)



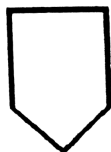
B.

(C)



C.

(D)



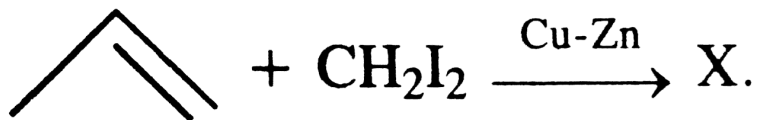
D.

Answer: B



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573. What is X in the following reaction



(A)



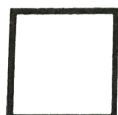
A.

(B)



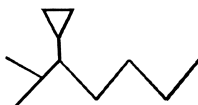
B.

(C)



C.

(D)



D.

Answer: B

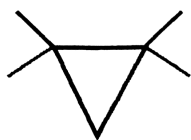


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574. What is X of the following reaction?



(A)



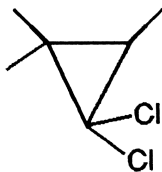
A.

(B)



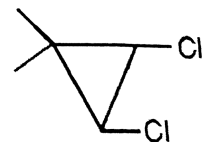
B.

(C)



C.

(D)



D.

Answer: C



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