



CHEMISTRY

BOOKS - MBD CHEMISTRY (ODIA ENGLISH)

HYDROCARBONS

Question Bank

1. What happens when butan-2-ol is heated with conc.

H_2SO_4 ?



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2. How can you separate ethylene, ethane and acetylene from their mixture ?

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3. How many isomers are possible for a compound of molecular formula C_4H_{10} ?

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4. Marsh gas mainly contains _____ .

(H_2S , CO , C_2H_2 , CH_4)

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5. What is the bond angle in methane ?

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6. Which alkane is formed when an aqueous solution of sodium ethanoate is electrolysed.

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7. What type of compound undergoes addition reaction ?

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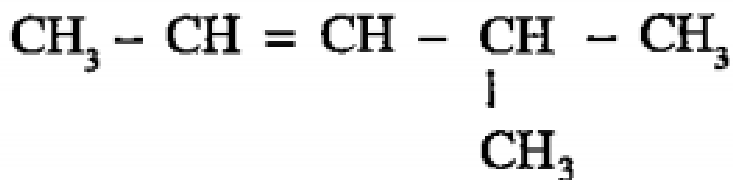
8. Ethylene reacts with dilute $KMnO_4$ to give _____ .

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9. Write down the structural formula of 2- Butene.

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10. Write the IUPAC name of the following:



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11. Indicate the hybridisation state of carbon atom in acetylene.

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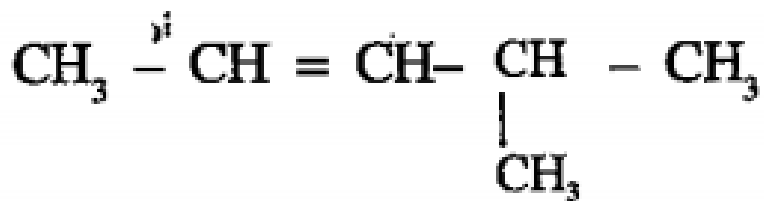
12. A double bond is composed of.....sigma and....bond.

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13. How many sigma and pi-bonds are present in acetylene ?

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14. Write the IUPAC name of



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15. What is benzenoid compound ?

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16. Give the graphic formula of toluene.

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17. Give the structural formulae of benzene.

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18. Write general formula for benzenoids.

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19. Write the chemical reaction of benzene with chlorine in presence of anhydrous $AlCl_3$.

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20. What happens when benzene reacts with conc. H_2SO_4 ?

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21. What is green oil ?

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22. Write the use of anhydrous $AlCl_3$.

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23. Convert Aniline to Chlorobenzene.

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24. What is Huckel's Rule ?

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25. Convert toluene into benzaldehyde.

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26. How phenol is obtained from chlorobenzene ?



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27. What type of hybridization is present in the carbon of benzene ring ?

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28. What is chemical name of Gammexane ?

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29. What is Schotten-Baumann reaction ?

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30. What happens when phenol is distilled with zinc dust ?

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31. What is BHC ?

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32. Nitration of benzene is an electrophilic substitution reaction. Why ?

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33. What is the main source of aromatic compounds ?

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34. Name the fraction from which benzene can be isolated in coal tar distillation.

A. Light oil

B. Middle oil

C. Heavy oil

D. Anthracene oil

Answer:

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35. Name the electrophile used in case of nitration of benzene ?



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36. What happens when benzene is heated with chlorine in presence of sunlight ?



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37. Write a note on Wurtz Reaction.



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38. What happens when propene is treated with hydrogen gas in presence of finely divided platinum catalyst ? Give equation.

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39. How does the melting point of n-alkanes vary with increase in the number of carbon atoms ?

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40. How do you get ethane from acetylene ?

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41. What happens when sodium propionate is heated with sodalime?

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42. What happens when ethyl iodide is heated with sodium in dry ethereal solution ? Give equation.

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43. What is wurtz reaction ? Give an example.

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44. How do you get nitro ethane from ethane ? Give equation.



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45. What is Kolbe's synthesis. Give one example.



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46. Why methane does not react with chlorine in darkness.



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47. How alkanes are prepared from alkyl halide ?

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48. State with equation what happens when aqueous solution of sodium acetate is electrolysed ?

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49. State and explain what is Markownikoff's rule ?

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50. What happens when propene is treated with hydrogen gas in presence of finely divided platinum catalyst ? Give equation.

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51. What happens when ethylene reacts with ozone ?

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52. Write with equation what happens when propene and HBr react ?

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53. What happens when sodium succinate is subjected to electrolysis ?

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54. How would you detect the presence of unsaturation in an organic compound ?

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55. How ethylene is obtained from ethyl alcohol ? Give equation.

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56. What is Kharasch effect ? Discuss with example.

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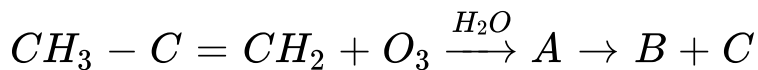
57. How does ethyl bromide react with alcoholic KOH solution ?

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58. Give a method for identifying the position of double bond in alkene.

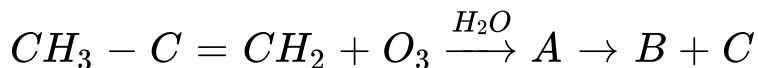
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59. Write note on: polymers Identify A, B and C as the case may be.



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60. Write note on: polymers Identify A, B and C as the case may be.



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61. Write a note on Markownikoff's Rule.

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62. What happens when propene is treated with hydrogen gas in presence of finely divided platinum catalyst ? Give equation.



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63. What happens when ethyl iodide is refluxed with alcoholic caustic potash ? Give equation.



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64. When ethyl bromide is treated with alcoholic KOH, results



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65. How do you get ethane from acetylene ?



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66. State and explain what is Markownikoff's rule ?



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67. What happens when ethylene reacts with ozone ?



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68. What is neoprene ? Give its one use.

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69. What happens when sodium succinate is subjected to electrolysis ?

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70. Write with equation what happens when propene and HBr react ?

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71. What happens when ethylene reacts with ozone ?

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72. What is teflon ? Give its one use.

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73. State and explain what is Markownikoff's rule ?

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74. What happens when acetylene is passed through ammoniacal silver nitrate solution ?

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75. How is ethylene obtained from ethyl alcohol ?

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76. What is Kharasch effect ? Discuss with example.

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77. How would you detect the presence of unsaturation in an organic compound ?

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78. What is Willámson synthesis?

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79. Write short note on : Friedel-Craft's reaction

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80. Explain about the sulphonation of benzene.

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81. What happens when halogen reacts with benzene ?

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82. Arrange the following compounds in the increasing order of acidity.



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83. What is T.N.T. ? How is it produced ?

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84. Name the reaction where Lewis acid is used as catalyst for aromatic alkylation.

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85. What happens when toluene is oxidised ?

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86. What happens when benzene is treated with a mixture of conc. HNO_3 and H_2SO_4 ?

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87. Write short note on Huckel's rule ?

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88. What is the main source of aromatic compounds ?

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89. Write short note on Halogenation.

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90. The reduction of benzoyl chloride with Pd _____ $BaSO_4$ produces _____.

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91. When sodium salt of benzoic acid is heated with sodalime produces _____.

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92. Gammexene is product of ____ of benzene.

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93. Name the reaction where Lewis acid is used as catalyst for aromatic alkylation.

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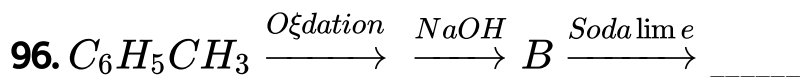
94. ____ takes part in the chlorination of benzene.

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95. $C_6H_6 + 3H_2 \xrightarrow{Ni / 200^\circ C} \text{_____}$.



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97. In sulphonation _____ acts as an electrophile.



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98. Aromatic amino compounds are called _____ .

A. Phenols

B. Anilines

C. Alkyl amines

D. Arenamines

Answer: Anilines



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99. Aromatic compounds undergo Friedel-Craft reaction in presence of anhydrous _____.



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100. _____ is/are used to obtain aromatic compounds.

A. Wood

B. Coal tar

C. Petroleum

D. Both B and C

Answer: Bituminus



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101. Phenol is a very _____ .

A. weak acid

B. weak base

C. Both

D. none

Answer: weak acid

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102. Benzaldehyde does not reduce Fehling solution but forms silver mirror with _____.

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103. Phenol treated with excess of bromine water gives _____.

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104. Phenol is sparingly soluble in _____.

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105. In the nitration of benzene, the electrophile is _____.

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106. According to Huckel's rule, an aromatic compound is a ring compound, which contain _____ electrons.

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107. The C - C bond length of benzene is _____.

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108. Phenol reacts with HCHO in presence of dilute acid forms _____.

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109. Name the reagent used to convert toluene to benzaldehyde.

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110. Cannizzaro's reaction is given by _____

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111. Phenol reacts with mercuric acetate to form _____ and _____ when heated in presence of _____.

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112. Benzaldehyde does not undergo Aldol condensation, whereas acetaldehyde does because _____.

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113. When phenol is heated with zinc dust, the product is

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114. Benzene diazonium chloride when treated with water _____ is formed:

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115. Benzoic acid does not undergo _____.

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116. In alkanes the bond angle is :

A. 109.5°

B. 109°

C. 120°

D. 180°

Answer: A



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117. An alkene is most likely to react with:

A. a free radical

B. an alkali

C. an electrophile

D. a nucleophile

Answer: A



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118. Which hydrocarbon is formed when aluminium carbide is reacted with water or dilute HCl?

A. methane

B. ethane

C. acetylene

D. ethylene

Answer: A



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119. When conc . Aqueous solution of potassium acetate is electrolysed we get

A. methane

B. ethane

C. acetylene

D. ethylene

Answer: B



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120. Name the hydrocarbon that is a liquid at STP.

A. ethane

B. propane

C. n-butane

D. n- pentane

Answer: D



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

- A. silicon carbide
- B. calcium carbide
- C. aluminium carbide
- D. iron carbide

Answer: C



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122. Which of the following statements is not true for ethane ?

- A. It can be chlorinated with chlorine
- B. It can be catalytically hydro-genated.
- C. When oxidised it produces CO_2 and H_2O .
- D. It is homologue of iso-butane.

Answer: B



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

- A. methane
- B. ethane

C. ethylene

D. methanol

Answer: B



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124. wurtz reaction using bromoethane yields:

A. 2-bromobutane

B. n-butane

C. isobutane

D. ethane

Answer: B

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125. Marsh gas mainly contains _____ .

(H_2S, CO, C_2H_2, CH_4)

A. C_2H_2

B. CH_4

C. H_2S

D. CO

Answer: B

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126. As compared to B.P. of straight chain isomers, the B.P. of branched chain alkane is :

A. lower

B. higher

C. equal

D. independent upon branching

Answer: B



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127. The highest B.P.is expected for :

A. iso-octane

B. n-octane

C. 2, 2, 3, 3-tetra methyl butane

D. n-butane

Answer: B



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128. The order of the reactivity of hydrogen in isopentane is :

A. $1^\circ = 2^\circ > 3^\circ$

B. $1^\circ > 2^\circ > 3^\circ$

C. $3^\circ > 1^\circ > 2^\circ$

D. $3^\circ > 2^\circ > 1^\circ$

Answer: D



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129. Final product of the oxidation of hydrocarbon is :

A. acid

B. alcohol

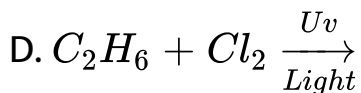
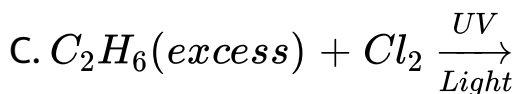
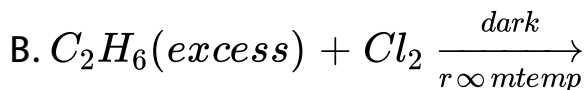
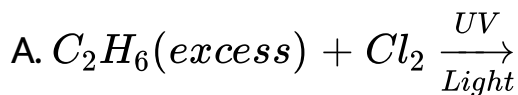
C. $CO_2 + H_2O$

D. aldehyde

Answer: C

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130. The reaction condition leading to the best yields of C_2H_5Cl are -



Answer: A

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131. Electrolysis of a concentrated solution of potassium acetate forms:

A. acetylene

B. butane

C. ethane

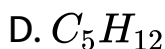
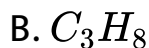
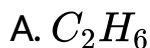
D. ethylene

Answer: C



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132. Ethyl iodide when heated with sodium metal in dry ether yields:



Answer: C



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133. The reaction $CH_4 + Cl_2 \xrightarrow[\text{Light}]{UV} CH_3Cl + HCl$ is an example of :

- A. Addition reaction
- B. Substitution reaction
- C. Elimination reaction
- D. Rearrangement reaction

Answer: B



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134. In the dichlorination reaction of propane, mixture of products are obtained .How many compounds the mixture contain ?

A. 2

B. 1

C. 3

D. 4

Answer: D



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135. On mixing certain alkane with chlorine and irradiating it with ultraviolet light, one forms only one monochloro alkane. The alkane could be :

A. neopentane

B. propane

C. pentane

D. isopentane

Answer: A



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136. Butene -1 can be converted to butane by reaction with :

A. Pd / H_2

B. Zn/HCl

C. $Sn - HCl$

D. Zn,Hg

Answer: A

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137. Bond angle in alkenes is equal to :

A. 120°

B. $109^\circ 28'$

C. 180°

D. 60°

Answer: A

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138. The compound having both sp^2 and Sp^3 hybridised carbon atom is:

- A. Propene
- B. Propyne
- C. Propediene
- D. none of these

Answer: C



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139. Conjugated double bonds are present in :

- A. Propylene

B. isobutane

C. butane

D. butadiene

Answer: D



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140. Of the following compounds which will have a zero dipole moment ?

A. 1,1-dichloro ethylene

B. cis-1,2-dichloro ethylene

C. trans-1, 2-dichloro ethylene

D. none of these

Answer: C



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141. Ethylene is formed by dehydration of :

A. CH_3CHO

B. C_2H_5OH

C. propyl alcohol

D. ethyle acetete

Answer: B



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142. Bromoethane on treatment with alcoholic KOH gives

:

A. ethyl alcohol

B. butane

C. methane.

D. ethylene

Answer: D



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143. n-propyle bromide on treatment with ethanolic potassium hydroxide produces :

- A. Propane
- B. Propene
- C. Propyne
- D. Propanol

Answer: B



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144. The dehydro halogenation of neopentyle bromide with alko.KOH mainly given:

- A. 2-methyl-1-butene
- B. 2-methyl-2-butene
- C. 2,2-dimethyl-1-butene
- D. 2-butene

Answer: B



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145. Alcoholic sol of KOH is used for :

- A. dehydrogenation
- B. dehalogenation
- C. dehydration

D. dehydrohalogenation

Answer: D



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146. 1-chloropropane when treated with alcoholic KOH gives:

A. 1-propene

B. 2-propene

C. isopropane

D. all the three

Answer: A



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147. The product formed when 1-butene is subjected to HBr in the presence of peroxide is :

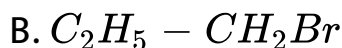
- A. 1- bromobutane
- B. 2- bromobutane
- C. 1, 1-dibromobutane
- D. 1,2-dibromobutane

Answer: A



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148. To the compound $CH_3 - CH = CH_2$, hydrogen bromide is added in the presence of peroxides the resultant compound formed is :



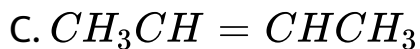
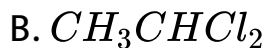
D. none of these

Answer: B



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149. Which of the following compound does not follow Markownikoff's law?



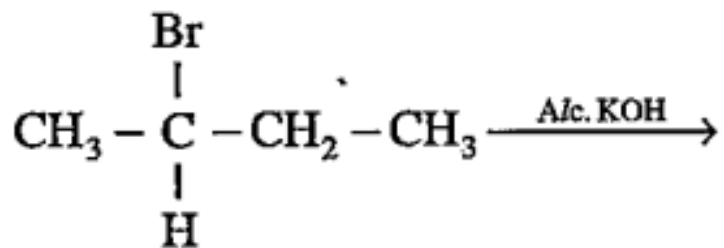
D. none of the above

Answer: C



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150. Major product of reaction is :



A. butene -1

B. butene-2

C. butane

D. butyne-1

Answer: B



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151. When propyne is treated with aqueous sulphuric acid in presence of mercuric sulphate, the major product is :

- A. isobutyle hydrogen sulphite
- B. 2-methyl-2-butane
- C. 2-methyl-2-butanol
- D. secondary butyle hydrogen sulphate

Answer: B

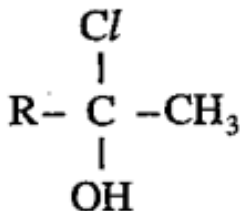


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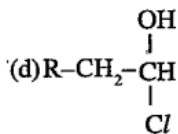
152. The addition of HOCl with unsymmetrical alkenes produces the product X as

$R - CH = CH_2 + HOCl \rightarrow X$. Therefore, the product

X is :



C.



D.

Answer: A



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153. Propyne and propene can be distinguished by :

A. *conc.* H_2SO_4

B. *dil.* H_2SO_4

C. Br_2 in CCl_4

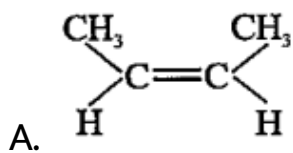
D. $AgNO_3$ in ammonia

Answer: D



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154. Which of the following compounds has the lowest dipole moment?

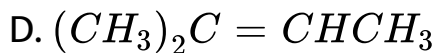
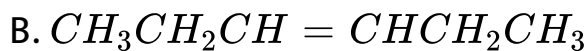


Answer: B

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155. Which alkene on ozonolysis given CH_3CH_2CHO and CH_3COCH_3 ?



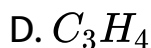
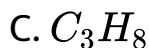
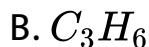


Answer: A



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156. Which of the following is homologous of ethylene?



Answer: C

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157. What is the product of reaction of 1,3-butadiene with Br_2 ?

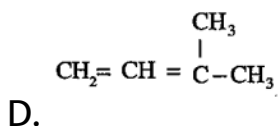
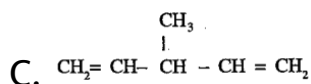
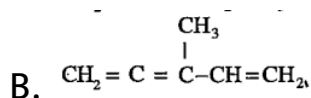
- A. 1, 2 Dibromobutene
- B. 3, 4-Dibromobutene
- C. 1, 4-Dibromobut-2-ene
- D. 2, 3-Dibromobutene

Answer: C

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158. An alkene gives two moles of HCHO, one mole of CO_2 and one mole of CH_3COCHO on ozonolysis .

What is the structure ?

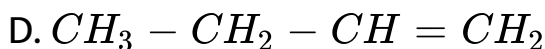
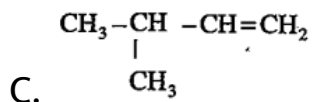
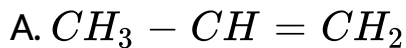


Answer: B



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159. Which does not follow Markownikoff's rule ?

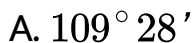


Answer: B



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160. Bond angle in alkynes is :



B. 180°

C. 120°

D. 360°

Answer: B



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161. Acidic hydrogen is present in :

A. ethyne

B. ethene

C. benzene

D. ethane

Answer: A

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162. Which of the following hydro carbon has the most electronegative carbon atom ?

- A. butane
- B. 1-butene
- C. 1-butyne
- D. 2-butyne

Answer: C

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163. Reduction of 2-Butyne with Na in liquid NH_3 gives predominantly:

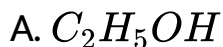
- A. n-butane
- B. trans-2-butene
- C. no reaction
- D. cis-2-butene

Answer: B



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



B. acetone

C. acetic acid

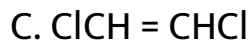
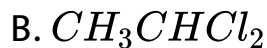
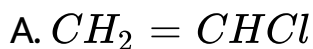
D. acetaldehyde

Answer: D



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165. Which of the following will be produced when C_2H_2 reacts with excess of HCl?



D. None of these

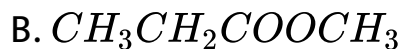
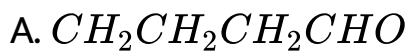
Answer: B



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166. Ethyl hydrogen sulphate is obtained by reaction of

H_2SO_4 ON:





Answer: B



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167. $CH_3 - CH = CH$ reacts with HCl to give:

A. 2, 2-Dichloropropane

B. 1, 1-Dichloropropane

C. 1, 2-Dichloropropane

D. 2-Chloropropane

Answer: A

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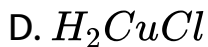
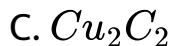
168. What happens when acetylene is passed through ammoniacal silver nitrate solution ?

- A. silver mirror
- B. metallic silver
- C. silver acetate
- D. silver acetylide

Answer: D

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169. Acetylene reacts with ammoniacal cuprous chloride to form :



Answer: C



Watch Video Solution

170. In its reaction with silver-nitrate, acetylene shows:

A. oxidising property

B. reducing property

C. basic property

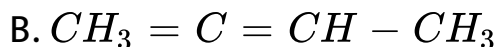
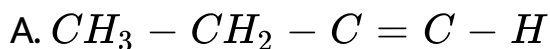
D. acidic property

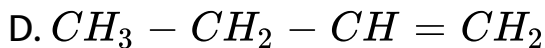
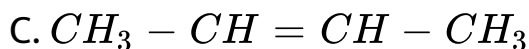
Answer: D



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171. A hydro-carbon that shows acidic behaviour towards sodium in liquid NH_3 is :



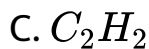
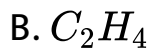
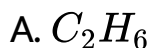


Answer: A



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172. When treated with ammoniacal cuprous chloride, which one among the following forms copper derivative?



Answer: C

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173. 1-Butyne on reaction with hot alkaline $KMnO_4$ gives:

- A. $CH_3CH_2CH_2COOH$
- B. $CH_3CH_2COOH + CO_2$
- C. CH_3CH_2COOH
- D. $CH_3COOH + HCOOH$

Answer: B

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174. When CaC_2 was hydrolysed, a gas was obtained. It had a garlic odour due to phosgene present as impurity. The gas was passed through ammoniacal solution of Cu_2Cl_2 , red precipitate was obtained. The gas was :

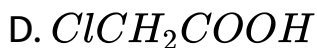
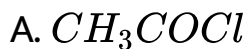
- A. ethylene
- B. propyne
- C. acetylene
- D. ethane

Answer: C



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

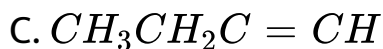
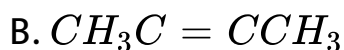
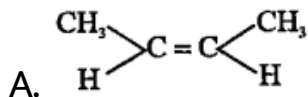


Answer: C



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176. Of the following compounds, which will have a zero dipole moment :



Answer: B

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177. What is the product when 2-Butyne is treated with lithium in presence of liquid NH_3 ?

A. n-butane

B. trans-2-butene

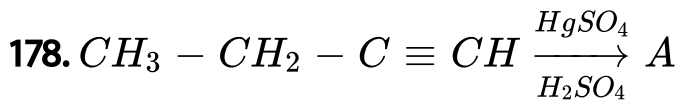
C. cis-2-butene

D. 1-butene

Answer: B



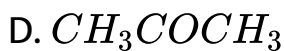
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A. $\text{CH}_3\text{CH}_2\text{COCH}_3$

B. $\text{CH}_3\text{CH}_2\text{CH}_2\text{CHO}$

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

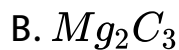
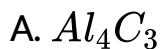


Answer: A



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179. Which of the following gives propyne on hydrolysis?



C. both are correct

D. none of these

Answer: B



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180. What happens when phenol is distilled with zinc dust ?

- A. Toluene
- B. Benzene
- C. Xylene
- D. none of the above

Answer: B



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181. In Benzene the 'C' atoms are:

A. sp^3 hybridised

B. sp^2 hybridised

C. sp hybridised

D. Unhybridised

Answer: B



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182. Coaltar is a main source of :

A. Aromatic compounds

B. Aliphatic compounds

C. Cycloalkanes

D. Heterocyclic compounds

Answer: A



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183. The following products are formed by fractional distillation of Coal tar. Which one is basic?

A. Phenol

B. Toluene

C. Anthracene

D. Pyridine

Answer: D



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184. All bonds in benzene are equal due to :

A. Tautomerism

B. I-effect

C. Resonance

D. Isomerism

Answer: C



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185. Toluene can be oxidised to benzoic acid by :

A. alk. $KMnO_4$

B. alk. $K_2Cr_2O_7$

C. any of these

D. none of these

Answer: A



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186. Phenol is less acidic than:

A. acetic acid

B. p-methoxy phenol

C. p-nitrophenol

D. ethanol

Answer: A



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187. Nitro group in nitrobenzene is :

A. ortho director

B. meta director

C. Para director

D. ortho and para director

Answer: B



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188. Nitration of benzene is:

- A. Nucleophilic substitution
- B. Electrophilic substitution
- C. Homolytic substitution
- D. Electrophilic addition

Answer: B



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189. The compound that is most reactive towards electrophilic nitration is :

A. Toluene

B. Benzene

C. Benzoic acid

D. Nitrobenzene

Answer: A



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190. The catalyst used in Friedel-Crafts reaction is :

A. electron rich

B. soluble in ether

C. insoluble

D. electron deficient

Answer: D



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191. In which case the carbon-carbon bond length is same ?

A. But-2-ene

B. But-1-ene

C. Benzene

D. Prop-1-yne

Answer: C



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192. Which of the following pairs have the same bond angle ?

- A. Ethane and ethyne
- B. Ethane and ethene
- C. Ethene and benzene
- D. Ethyne and benzene

Answer: C



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193. Electrophilic substitution in phenol takes place at _____ position.

A. o- and p- position

B. m-position

C. o-position

D. p-position

Answer: A



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194. Toluene reacts with Cl_2 in presence of $FeCl_3$ giving

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

Answer: C



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195. Nitration is easy in case of :

- A. Toluene
- B. Nitrobenzene
- C. Chlorobenzene

D. benzenesulphonicacid

Answer: A



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196. Benzene reacts with Cl_2 in presence of direct sunlight to give _____

A. 666

B. BHC

C. Gammexane

D. All

Answer: B



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197. The C - C bond length of benzene is _____.

A. 1.54\AA

B. 1.20\AA

C. 1.39\AA

D. 1.34\AA

Answer: C



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198. Benzoic acid when heated with sodalime gives:

A. benzene

B. sodium benzoate

C. benzaldehyde

D. benzyl alcohol

Answer: A



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199. Sodium salt of benzene sulphonic acid on fusion with caustic soda gives:

A. C_6H_5OH

B. C_6H_6

c. C_6H_5COOH

D. None

Answer: A

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200. p- Nitrophenol is a stronger acid than phenol because nitro group is :

A. Electron donating

B. Electron withdrawing

C. Basic

D. Acidic

Answer: B

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201. Which is the correct statement ?

- A. Benzyl alcohol is more acidic than phenol.
- B. Ethanol is a powerful oxidising agent.
- C. Phenol is more acidic than propanol.
- D. Ethane has higher boiling point than ethanol.

Answer: C

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202. Salicylic acid on heating with sodalime forms:

- A. Phenol
- B. Benzene
- C. Benzyl alcohol
- D. Benzoic acid

Answer: A

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203. Phenol gives salicylaldehyde on heating with $CHCl_3$ and $NaOH$. The reaction is called:

- A. Cannizzaro's reaction

B. wurtz reaction

C. Reimer-Tiemann reaction

D. Perkin 's reaction

Answer: C



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204. Which of the following is the strongest reducing agent?

A. HCOOH

B. CH_3COOH

C. $\text{C}_6\text{H}_5\text{COOH}$

D. $ClCH_2COOH$

Answer: A

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205. Which alkane cannot be obtained by Wurtz's reaction ?

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206. What is the angle between any two bonds in methane?

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207. Which alkane is formed when an aqueous solution of sodium ethanoate is electrolysed.

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208. What is the bond angle in methane ?

 [Watch Video Solution](#)

209. Why methane does not react with chlorine in darkness.

 [Watch Video Solution](#)

210. Why methane can't be prepared by following Sabatier and Senderson 's reaction?

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211. Terminal carbon in butane is ___ hybridised .

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212. ____ is the alkane having negative octane number.

A. n-hexane

B. n-heptane

C. n-octane

D. n-butane

Answer: n- nonane



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213. Order of relativity of alkanes in substitution reaction is _____



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214. Give an use of paraffin wax.



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215. LPG is an mixture of ____ & ____ .

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216. Stability of alkanes decreases with ____ in molecular mass.

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217. A regular tetrahedron is obtaining during ____ hybridisation in alkanes.

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218. Why all the four C - H bonds in methane are identical ?



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219. Marsh gas mainly contains _____ .

(H_2S , CO , C_2H_2 , CH_4)

A. Methane

B. Ethane

C. Propane

D. Butane

Answer: A::C::D



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220. Give the general representation of alkanes.



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221. Paraffins are _____ hydrocarbons.

A. Saturated

B. Unsaturated

C.

D.

Answer: A::D



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222. IUPAC name of Freon-12 is _____.



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223. In which reaction alkyl halides react with metallic sodium in the presence of anhydrous ether ?



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224. How many sigma and pi-bonds are there in ethylene ?



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225. Fill up the blank.

A double bonds is composed of ____sigma and one ____bond.

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226. Ethylene molecule is ____shaped .

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227. Give the general representation of alkanes.

 [Watch Video Solution](#)

228. Write the general formula of alkyne.



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229. How many sigma and pi-bonds are present in acetylene ?



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230. Which compound is formed when acetylene is passed into 42% H_2SO_4 at $60^\circ C$ in the presence of $HgSO_4$?



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231. Which organic compounds is used in welding?

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232. What type of hybridisation is found in acetylene?

 [Watch Video Solution](#)

233. Write the general formula of alkyne.

 [Watch Video Solution](#)

234. Why alkynes do not show geometrical isomerism ?

 [Watch Video Solution](#)

235. State two uses of acetylene.

 [Watch Video Solution](#)

236. What is Westron ?

 [Watch Video Solution](#)

237. What is the product formed when acetylene dissolved in ethyl alcohol combines with chlorine ?

 [Watch Video Solution](#)

238. Commercial name 1, 1, 2, 2-tetrachloro-ethane is -.

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239. How benzene is obtained from benzoic acid ?

 [Watch Video Solution](#)

240. Nitration of benzene is:

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241. Whether 'Gammxine' is the product of substitution or addition reaction of benzene ?

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242. Name the reaction where Lewis acid is used as catalyst for aromatic alkylation.

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243. Name the electrophile which takes part in the chlorination of benzene .

 [Watch Video Solution](#)

244. What is the electrophile produced in a nitrating mixture used for the nitration of benzene?

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245. Write the structural formula of Benzoic acid .

 [Watch Video Solution](#)

246. Give the graphic formula of benzene.

 [Watch Video Solution](#)

247. What is formed when benzene reacts with hydrogen in the presence of catalyst ?

 [Watch Video Solution](#)

248. Give the graphic formula of toluene.

 [Watch Video Solution](#)

249. Give the graphic formula of p-xylene.

 [Watch Video Solution](#)

250. TNT is mostly used as _____.

 [Watch Video Solution](#)

251. Benzaldehyde does not undergo Aldol condensation, whereas acetaldehyde does because _____.

 [Watch Video Solution](#)

252. What is Benzoin condensation reaction?

 [Watch Video Solution](#)

253. The reduction of benzoyl chloride with Pd_____ $BaSO_4$ produces_____.

- A. Benzoyl chloride
- B. Benzaldehyde
- C. Benzoic acid
- D. None of these

Answer: A::B::D

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254. Give reasons: Why phenol being an acid does not react with Sodium bicarbonate solution.

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255. How will you synthesize salicylic acid from phenol ?

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256. What is benzenoid compound ?

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257. _____ is/are used to obtain aromatic compounds.



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258. _____ is also known as green oil.



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259. Give three position isomers of xylene.



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260. What are the two chain isomers of propyl benzene?



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 Watch Video Solution

261. Aromatic compounds undergo Friedel-Craft reaction in presence of anhydrous _____.

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262. Hydroxy derivatives of aromatic compound are called _____.

 Watch Video Solution

263. Aromatic amino compounds are called _____.

 Watch Video Solution

264. Nuclear hydroxy derivatives are called _____ and side chain substituted hydroxy derivatives are called _____.

A. phenols, phenols

B. alcohols, alcohols

C. alcohols, phenols

D. phenols, alcohols

Answer: Phenols, aromatic alcohols .



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265. In sulphonation _____ acts as an electrophile.



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266. What are the electrophiles in Freidel Craft reaction ?



[Watch Video Solution](#)

267. Benzene is formed if sodium salt of _____ heated with sodalime .



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268. Give the structure of Gammexane.



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269. By heating phenyl bromide and methyl iodide with sodium in dry ether .we get.

A. xylene

B. toluene

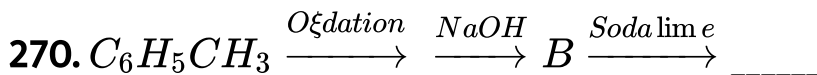
C. benzene

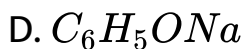
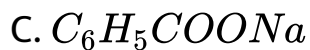
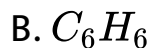
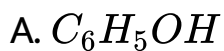
D. benzaldehyde

Answer:



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Answer: C

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271. The C - C bond length of benzene is _____.

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272. Why benzene burns with a sooty flame ?



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273. Write down the products of the following reactions :

Toluene is treated with alkaline $KMnO_4$.



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274. Name the electrophile which takes part in the chlorination of benzene .



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275. Name the product formed ,when vapours of benzene are passed over V_2O_5 at $500^\circ C$?

 [Watch Video Solution](#)

276. Alcoholic solution of benzene is known as _____

 [Watch Video Solution](#)

277. Carboic acid is 5% solution of _____

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278. Isopropyl benzene is also known as _____

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279. According to Huckel's rule, an aromatic compound is a ring compound, which contains _____ electrons.

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280. In the nitration of benzene, the electrophile is _____.

 [Watch Video Solution](#)

281. In the nitration of benzene ,the attacking reagent is _____.



D. none

Answer: NO_2^+



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282. Aromatic and aliphatic hydroxy compound have _____ properties .

(Similar, Dissimilar)

 [Watch Video Solution](#)

283. Complete the reaction: $C_6H_6 + O_2 \xrightarrow{V_2O_5}$

 [Watch Video Solution](#)

284. Phenol is sparingly soluble in ____.

 [Watch Video Solution](#)

285. Give the order in which acidic strength of nitrophenol decreases.

 [Watch Video Solution](#)

286. Why carboxylic acids do not form oximes ?

 [Watch Video Solution](#)

287. Phenol treated with excess of bromine water gives

-----.

- A. m-bromophenol,
- B. o and p-bromophenol,
- C. 2,4-dibromophenol,
- D. 2,4,6-tribromophenol

Answer: B::D

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288. Benzaldehyde does not reduce Fehling solution but forms silver mirror with _____.

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289. The molecular weight of benzoic acid as determined by depression in freezing point method corresponds to :

- A. Ionisation of benzoic acid
- B. Dimerisation of benzoic acid

C. Trimerisation of benzoic acid

D. Solution of benzoic acid

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



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290. When phenol is heated with zinc dust, the product is

A. Biphenyl,

B. Benzene,

C. Benzaldehyde ,

D. Phenol phthalein

Answer: B

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291. Benzaldehyde does not undergo Aldol condensation, whereas acetaldehyde does because _____.

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292. Phenol reacts with mercuric acetate to form _____ and _____ when heated in presence of _____.

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293. Phenol is less acidic than:

A. Ethanol,

B. Methanol

C. o-nitrophenol,

D. p-methyl phenol

Answer:



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294. What is the chemical composition of phenyl salicylate ?



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295. Phenyl salicylate is otherwise known as _____

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296. Phenol gives violet colouration with _____ solution.

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297. Cannizzaro's reaction is given by _____

$(C_6H_5CH_2CH_3, CH_3COCH_3, C_2H_5COCH_3, C_6H_5CHO)$

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298. Name the reagent used to convert toluene to benzaldehyde.

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299. Cannizzaro's reaction is shown by which type of aldehydes ?

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300. Phenol reacts with bromine water to give a white ppt. of ____.

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301. Bakelite is formed by the chemical combination of phenol and _____.



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302. In Etard's reaction ,how further oxidation of benzaldehyde to benzoic acid is prevented ?



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303. Name the reaction in which dry HCl gas is first passed through ethereal solution of phenyl cyanide and stannous chloride to form aldimine ,which is when hydrolysed to get benzaldehyde .

A. Gattermann reaction

B. Stephen reaction

C. Rosenmund reduction

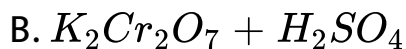
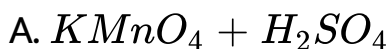
D. Perkin reaction

Answer:



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304. Toulene may be oxidised to Benzaldehyde by the use of _____



C. CrO_2Cl_2

D. All of these

Answer: B::C



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305. What is Clemmensen reduction reaction?



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306. When sodium benzene sulphonate is fused with sodium hydroxide the product formed is

A. Benzene

B. Phenil,

C. Benzene triophenol

D. None of these

Answer:



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307. Which of the following does not respond Fehling's solution ?

A. Acetaldehyde,

B. Glucose,

C. Benzaldehyde,

D. Fromaldehyde

Answer: A::B::D

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308. Why benzoic acid does not undergo Friedel-Craft reaction ?

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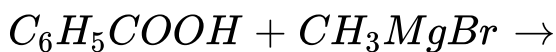
309. Name the product formed ,when benzoic acid reacts with ammonia to form.

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310. What is Claisen rearrangement ?

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311. Complete the following reaction .



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312. Give one reaction to show that phenol is acidic in nature.

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313. _____ being an aldehyde does not respond Fehling solution test.



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314. C_6H_5OH when dissolved in water gives a solution with pH _____.

A. >7

B. $=7$

C. <7

D. None of these

Answer: less than seven:



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315. Benzene diazonium chloride when treated with water _____ is formed:



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316. Give the structure of Cumene.



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317. Give the graphic representation of Naphthalene.



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318. Give the name of the hydrolysed product formed by reacting benzene with ozone .



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319. Analgin



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320. Aromatic _____ are most widely used in dyeing industry.



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321. Give the structure of anthracene.

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322. State with equation what happens when aqueous solution of sodium acetate is electrolysed ?

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323. What happens when ethane reacts with nitric acid at $400^{\circ}C$?

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324. Two moles of sodium acetate will produce how many moles and how many grams of methane ?

A. 1 mole, 16g

B. 2mole, 16g

C. 2mole, 32g

D. 1mole, 32g

Answer:

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325. What is wurtz reaction ? Give an example.

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326. How do you get ethane from acetylene ?

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327. Why n-pentane has higher boiling point than Neopentane ?

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328. What happens when propene is treated with hydrogen gas in presence of finely divided platinum catalyst ? Give equation.

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329. A mixture of ethane , ethylene and acetylene was passed through ammoniacal cuprous chloride solution and then through concentrated sulphuric acid .What would be the nature of the emergent gas ? Explain with equation .

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330. An unsaturated hydrocarbon having the molecular formula C_5H_8 gives two molecules of formaldehyde and one molecule of 2- ketopropanal on ozonolysis. Write the structure of the hydrocarbon .

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331. What happens when propene is treated with HBr in the presence of benzyl peroxide . Give equation .



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332. What is Kharasch effect ? Discuss with example.



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333. How would you detect the presence of unsaturation in an organic compound ?



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334. State and explain what is Markownikoff's rule ?

 [Watch Video Solution](#)

335. Write with equation what happens when propene and HBr react ?

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336. How alkanes are prepared from alkyl halide ?

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337. How alkenes are prepared from alcohol ?

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338. What happens when sodium succinate is subjected to electrolysis ?

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339. Explain, ethylene dissolves in dilute H_2SO_4 although it is an organic compound.

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340. What happens when liquid ethylene is subjected to high pressure at $200^{\circ}C$?

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341. How can ethyne be converted to propyne ?

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342. Suggest a test to distinguish but - 1 - yne and but -2- yne .Give equation .

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343. State a reaction with equation to establish the acidic character of ethyne molecule .

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344. How acetylene is prepared from calcium carbide ?

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345. What happens when acetylene is passed through ammoniacal silver nitrate solution ?

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346. Explain, why phenol is acidic, while ethyl alcohol is neutral.

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347. Discuss Reimer-Tiemann reaction.

 [Watch Video Solution](#)

348. State and explain Huckel' s rule with an example .

 [Watch Video Solution](#)

349. What is the difference between 1, 3, 5 - cyclohexatriene and benzene ?

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350. Discuss Reimer-Tiemann reaction.

 [Watch Video Solution](#)

351. Explain the acidic character of phenol.

 [Watch Video Solution](#)

352. Out of Cannizzaro's reaction and Aldol condensation which is possible for benzaldehyde ? Give equation .



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353. How Benzene is isolated from coal-tar ?



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354. Write short note on Huckel's rule ?



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355. Write with equations, what happens when benzene and methyl chloride react in presence of anhydrous aluminium chloride .

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356. What do you understand by 'aromaticity'?

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357. What happens when benzene reacts with chlorine in presence of $FeCl_3$ and in absence of sunlight ? Give equation.

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358. How can you obtain benzene from acetylene ?

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359. How can you prepare phenol by using benzene diazonium chloride ?

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360. What happens when phenol is heated with zinc dust ?

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361. What happens when phenyl acetate is heated with anhydrous aluminium chloride ?

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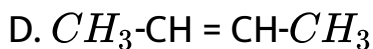
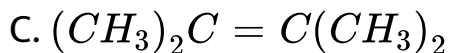
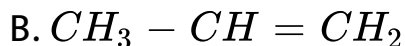
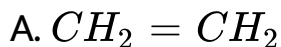
362. Formation of ethylene from ethyl bromide is a case of :

- A. Addition reaction
- B. Substitution reaction
- C. Elimination reaction
- D. Rearrangement reaction

Answer: C

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363. The alkene which on reductive ozonolysis yields acetone is:



Answer: C

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364. Which of the following reaction is shown by alkynes:

- A. Addition
- B. Substitution
- C. Polymerization
- D. All of the above

Answer: D

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365. The highest B.P.is expected for :

- A. Iso-octane

B. n-octane

C. 2,2,3,3-tetramethylbutane

D. n-butane

Answer: B

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366. Number of acidic hydrogen atom in butyne-1 is:

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367. Baeyer's reagent is:

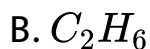
- A. Alkaline permanganate solution
- B. Acidified permanganate solution
- C. Neutral permanganate solution
- D. Aqueous bromine solution

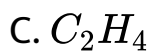
Answer: A



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368. Hydrocarbon reacts with metal by displacing the H atom is:





Answer: D

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369. Among the paraffins it is generally found that with an increase in the molecular weight:

- A. The freezing point decreases
- B. The boiling point decreases
- C. The boiling point increases
- D. The vapor density decreases

Answer: C

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370. Ethylene may be prepared by the dehydration of:

- A. Ethyl alcohol
- B. Methyl alcohol
- C. butane
- D. ethane

Answer: A

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371. 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 the single step

Answer: B



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372. The chemical oxidation of tertiary hydrogen in alkanes leads to the formation of:

A. Alcohol

B. Aldehyde

C. Ketone

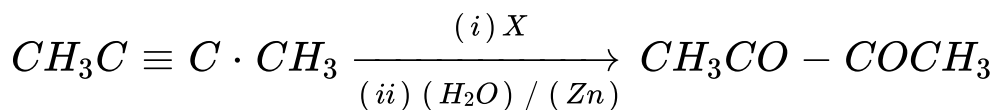
D. None of these

Answer: A



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373.



in the above reaction X is :

A. HNO_3

B. O_2

C. O_3

D. $KMnO_4$

Answer: C



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374. Acetylene reacts with ammoniacal cuprous chloride to form :

A. CuH_2

B. Cu_2H_2

C. Cu_2C_2

D. H_2CuCl

Answer: C



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375. Ozone is prepared by passing silent electric discharge through

A. Air

B. N_2

C. H_2

D. CO_2

Answer: C



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376. Propene reacts with Cl_2 at $400 - 600^\circ C$ to give:

A. 1,2 - dichloropropane

B. Allyl chloride

C. No reaction

D. Polyvinyl chloride

Answer: B



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377. Which hydrocarbon will react with $NaNH_2$ to form sodium salt:

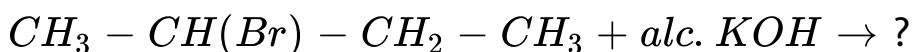
- A. Benzene
- B. Ethane
- C. Ethene
- D. Acetylene

Answer: D



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378. Major product of the following reaction is?



A. Butene - 1

B. Butene - 2

C. Butane

D. Butyne - 1

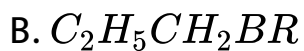
Answer: B



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379. To the compound $CH_3 - CH = CH_2$, hydrogen bromide is added in the presence of peroxides the resultant compound formed is :

A. $CH_3CHBrCH_3$



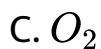
D. none of these

Answer: B



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380. Bacterial decomposition of cellulose material present in sewage water gives.



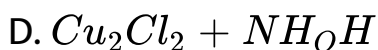
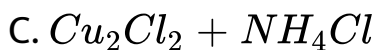
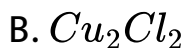
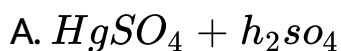
D. N_2

Answer: B



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381. Catalyst used in dimerization of acetylene to prepare chloropene is:



Answer: C



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382. The most important method of preparation of hydrocarbons of lower carbon number is:

- A. Pyrolysis of higher carbon number hydrocarbons
- B. Electrolysis of salts of fatty acids
- C. Sabatier-Senderen's reaction
- D. Direct synthesis

Answer: A



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383. Which of the following will have least hindered rotation about C-C bond ?

A. Ethane

B. Ethylene

C. Acetylene

D. Hexachloroethane

Answer: A



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384. The carbon-carbon length is saturated, aliphatic compound is:

A. 1.33\AA

B. 1.54\AA

C. 1.39\AA

D. 1.45\AA

Answer: B



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385. The most reactive halogen in the halogenation of alkanes is:

A. Cl_2

B. Br_2

C. I_2

D. All are equal

Answer: A



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386. Anti-Markownikoff addition of HBr is not observed in

:

A. Propene

B. Butene - 1

C. Butene-2

D. Pentene-2

Answer: C

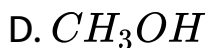
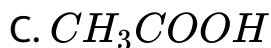
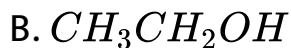
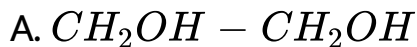
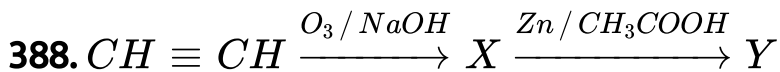
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387. Kolbe's synthesis of sodium salt of butanoic acid gives:

- A. n-hexane
- B. Isobutane
- C. Butane
- D. Ethene

Answer: A

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Answer: A



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389. The distinguishing test for triple bond containing acidic hydrogen is:

A. Br_2, CCl_4

B. Alkaline $KMnO_4$

C. $Ag(NH_3)_2^+$

D. Lucas reagent

Answer: C

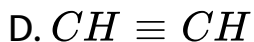
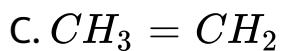


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390. Write the products formed when ethyl alcohol is heated with conc. H_2SO_4 at different temperature.

A. $CH_3COOC_2H_5$

B. $CH_3 - CH_3$



Answer: C

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391. When alcoholic solution of ethylene dibromide is heated with granulated zinc, the compound formed is:

A. Ethane

B. Ethylene

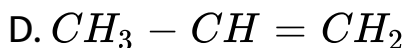
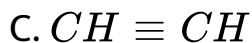
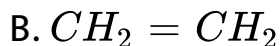
C. Butane

D. Isobutane

Answer: C

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392. Which is expected to react most readily with bromine?



Answer: B

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393. The structural formula of a compound is $CH_3 - CH = C = CH_2$. The type of hybridisation at the four carbon atoms from left to right:

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

Answer: C



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394. A fuel contains 25% n-heptane and 75% iso-octane.

Its octane number is :

A. 50

B. 75

C. 100

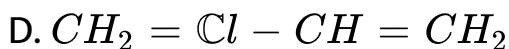
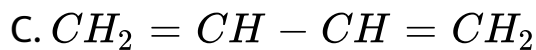
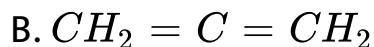
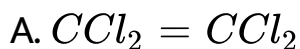
D. 25

Answer: B



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395. Which of the following possesses an sp-hybridised carbon in its structure:



Answer: B



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396. 1,3-butadiene has:

A. Only sp -hybridised C-atoms

B. Only sp^2 -hybridised C-atoms

C. sp , sp^2 and sp^3 -hybridised C-atoms

D. sp and sp^2 -hybridised C-atoms

Answer: B



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397. The shape of 2-butene is:

A. Linear

B. Planar

C. Tetrahedral

D. Pyramidal

Answer: B



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398. Propadiene, C_3H_4 molecule contains:

- A. Two sp^2 and one sp-hybrid carbon
- B. One sp^2 and two sp-hybrid carbon
- C. One sp^2 and three sp-hybrid carbons
- D. None of these

Answer: A



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399. The bond between carbon atom (1) and carbon atom (2) in compound

$N \equiv C - CH = CH_2$ involves the hybrid is:

A. sp^2 and sp^2

B. sp^3 and sp

C. sp and sp^2

D. sp and sp

Answer: C



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400. Amount of Br_2 required to react with 5g pentene to form monobromo derivative is:

A. 11.11 g

B. 11.43 g

C. 5.55 g

D. None of these

Answer: B



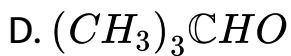
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401. The compound in which carbon atom uses only its sp^3 - hybrid orbitals for bond formation is :

A. HCOOH

B. NH_2CONH_2

C. $(CH_3)_3C.OH$

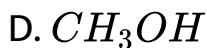
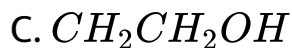
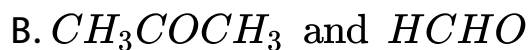
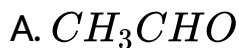


Answer: C



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402. The ozonolysis of isobutene gives:



Answer: B



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403. When alkyl halide is treated with zinc-copper couple and ethanol we get?

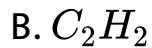
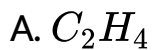
- A. Alkane
- B. Alkyne
- C. Alkene
- D. Ether

Answer: A



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404. The main constituent of biogas is _____.



Answer: C



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405. Which of the following is unsymmetrical alkene?

A. 1-butene

B. 2-hexene

C. 1-pentene

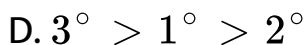
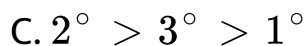
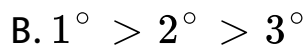
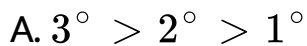
D. All of these

Answer: D



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406. Ease of sulphonation of alkanes is:



Answer: A



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407. Reduction of carbonyl compounds to alkanes with $NH_2 - NH_2$ and NaOH is called:

- A. Clemmensen reduction
- B. Wolfe-Kishner reduction
- C. Wurtz's reaction
- D. none

Answer: B



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408. In a mixture of iso - octane and n-heptane, the percentage of n-heptane is 10. The octane number of the fuel is:

A. 10

B. 90

C. 110

D. 100

Answer: B



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409. Normal alkanes can undergo sulphonation if they contain:

- A. 4 carbon atoms
- B. 5 carbon atoms
- C. Atleast 6 carbon atoms
- D. 3 carbon atoms

Answer: C



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410. n-hexadecane (or cetane) has cetane number:

A. 100

B. Zero

C. 90

D. 110

Answer: A



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411. Reduction of carbonyl compound to alkanes using
ZN/Hg + HCl is called:

A. Clemmensen reduction

B. Wolfe-Kishner reduction

C. wurtz reaction

D. None of the above

Answer: A



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412. Butene-2 exhibits:

A. Geometrical isomerism

B. Optical isomerism

C. Metamerism

D. None of these

Answer: A

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413. Alcoholic sol of KOH is used for :

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

Answer: C

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414. Presence of peroxide effects the addition of:

A. HBr

B. HCl

C. HI

D. All of these

Answer: A



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415. Two jars A and B are filled with hydrocarbons. Br_2 in CCl_4 is added to these jars. A does not decolourises whereas B decolourises. What are A and B:

A. Alkane and alkene

B. Alkene and alkane

C. Both

D. None of these

Answer: A



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416. Alkynes can be reduced to alkenes hydrogenation in presence of:

A. Rancy Ni

B. Anhy $AlCl_3$

C. Pd

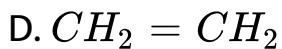
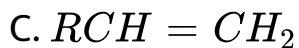
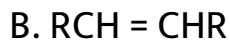
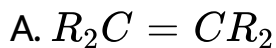
D. Lindlar's catalyst

Answer: D



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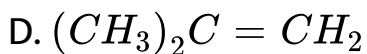
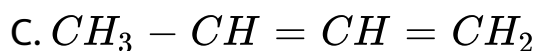
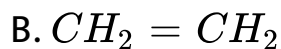
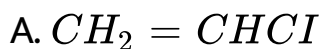
417. Which of the following alkenes is most stable?



Answer: A

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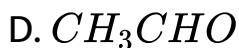
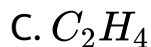
418. Addition of halogen acid occurs at slowest rate in :



Answer: D

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419. Which does not react with chlorine in dark?



Answer: A



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420. A hydrocarbon has the formula C_3H_4 . To find out whether it contains two double bonds or a triple bond, the following test is performed:

A. Passed through ammoniacal $AgNO_3$

B. Treated with Baeyer's reagent

C. Treated with Fehling's solution

D. Treated with Br_2 water

Answer: A



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421. Butyne-1 and butyne-2 can be distinguished by:

A. Br_2 water

B. Benedict reagent

C. Alkaline $KMnO_4$

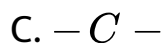
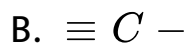
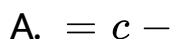
D. Ammoniacal cuprous chloride

Answer: D



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422. Hydrogen has appreciable acidic character when it is bonded with:



D. None of these

Answer: B



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423. If 20 ml of methane (CH_4) is burnt using 50 ml of oxygen. The volume of the gases left after cooling to room temperature will be:

A. 60 ml

B. 70 ml

C. 30 ml

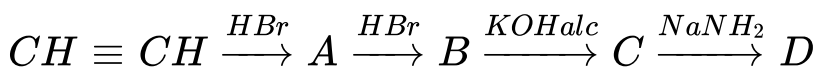
D. 50 ml

Answer: C



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424. In the following sequence the product D is,



A. Ethanol

B. Ethane

C. Ethyne

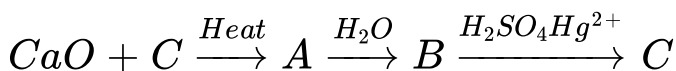
D. Ethanal

Answer: C



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425. The end product of the following sequence is,



- A. Ethanol
- B. Ethyl hydrogen sulphate
- C. Acetaldehyde
- D. Ethylene glycol

Answer: C



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426. Of the following compounds ,which will have a zero dipole moment :

- A. 1, 1-dichloroethylene
- B. Cis 1, 2 -dichloroethylene

C. Trans-1,2-dichloroethylene

D. None of these

Answer: C



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427. The compound having both sp and sp^2 - hybridised carbon atom is :

A. Propene

B. Propane

C. Propadiene

D. None of these

Answer: C

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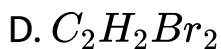
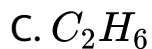
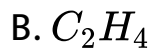
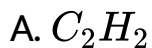
428. When n-hexane/n-heptane is passed through Cr_2O_3 supported over alumina at $600^\circ C$ gives:

- A. Hexane
- B. Hexyne
- C. Benzene, Toluene
- D. None of the above

Answer: C

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429. The C-H bond distance is the longest in:

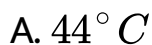


Answer: C



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430. The flash point in India is fixed at :



B. $35^{\circ}C$

C. $22.8^{\circ}C$

D. $30^{\circ}C$

Answer: A



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431. IUPAC name of $CH_2 = CH - CH_3$ group is :

A. Allyl

B. Propyl

C. Prop-2-enyl

D. Prop-1-enyl

Answer: C

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432. When propyne is treated with aqueous H_2SO_4 in presence of $HgSO_4$ the major product is :

- A. Propanal
- B. Propyl hydrogen sulphate
- C. Acetone
- D. Propanol

Answer: C

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433. As compared to B.P. of straight chain isomers, the B.P. of branched chain alkane is :

A. Lower

B. Higher

C. Equal

D. Does not depend upon branching

Answer: A



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434. $CH_3 - CH = CH$ reacts with HCl to give:

A. 2,2-dichloropropane

B. 1,1-dichloropropane

C. 1,2-dichloropropane

D. 1-chloropropene

Answer: A



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

A. n-propyl chloride

B. 2-chloropropane

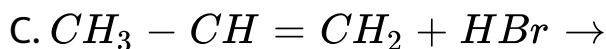
C. Allyl chloride

D. No reaction

Answer: B

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436. Which of the following reactions will yield,2,2-dibromopropane:



Answer: B



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

- A. Benzene
- B. Acetylene
- C. Propyne
- D. Butyne -2

Answer: D



438. In the complete combustion of C_nH_{2n+2} the number of oxygen moles required is :

A. $\frac{n}{2}O_2$

B. $\left(\frac{n+1}{2}\right)O_2$

C. $\left(\frac{3n+1}{2}\right)O_2$

D. $\left(\frac{n+2}{2}\right)O_2$

Answer: C

439. Alkanes mainly show reactions involving :

A. Carbonium

B. Ionic elimination

C. Ionic formation

D. Heat/photochemical substitution

Answer: D



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440. Alkenes usually undergo :

A. Addition reactions

B. Substitution reactions

C. Elimination reactions

D. None of these

Answer: A



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441. When acetylene reacts with hydrochloric acid in presence of mercuric chloride, the product obtained is :

A. Methyl chloride

B. Acetaldehyde

C. Vinyl chloride

D. Formaldehyde

Answer: C



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442. Which gives only one monosubstitution product on chlorination?

A. n-pentane

B. Neopentane

C. Isopentane

D. n-butane

Answer: B



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443. When CaC_2 was hydrolysed, a gas was obtained. It had a garlic odour due to phosgene present as impurity. The gas was passed through ammoniacal solution of Cu_2Cl_2 , red precipitate was obtained. The gas was :

- A. Ethylene
- B. Propyne
- C. Acetylene
- D. Ethane

Answer: C

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444. A mixture of CH_4 steam on passing over nickel suspension on alumina at $800^\circ C$ gives :

A. CO only

B. H_2 only

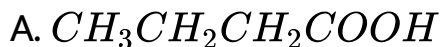
C. CO and H_2

D. None of these

Answer: C

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445. 1-butyne on reaction with hot alkaline $KMnO_4$ gives:



Answer: D



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446. 2-methyl pentene-2 on ozonolysis will give :

- A. Only propanal
- B. propanal and ethanal
- C. propan-2-one and ethanal
- D. propan-2-one and propanal

Answer: D



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447. Which one of the following can distinguish propyne from propene :

- A. Br_2 water
- B. Ammoniacal $AgNO_3$

C. Aq. $KMnO_4$

D. Dil. H_2SO_4

Answer: B

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

A. Ethyl chloride and n-butyl chloride

B. Methyl bromide and n-pentyl bromide

C. n-propyl bromide

D. Ethyl bromide and n-butyl bromide

Answer: C



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449. The major product in the acid catalysed dehydration of 2-pentanol is :

A. 4-pentene

B. 3-pentene

C. 2-pentene

D. 1-pentene

Answer: C



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450. Ethylene forms ethylene chlorohydrin by the action of :

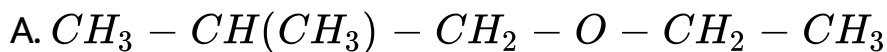
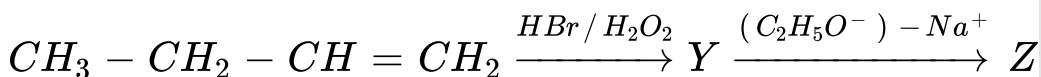
- A. Dry chlorine gas
- B. Dry hydrogen chloride gas
- C. Solution of chlorine gas in water
- D. Dilute hydrochloric acid

Answer: C

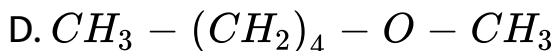
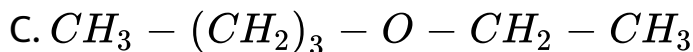
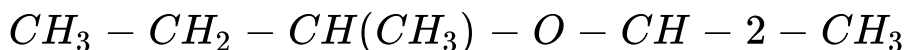


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451. Identify Z in the sequence ,



B.



Answer: C



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452. Addition of bromine to 1,3-butadiene gives :

- A. 1,2-addition product only
- B. 1, 4-addition product only
- C. Both 1, 2 and 1,4-addition products
- D. No reaction

Answer: C



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453. Ethylene from ethyl bromide is obtained by treating it with :

- A. Hydrogen
- B. Alcoholic caustic potash

C. Aqueous caustic potash

D. Aqueous caustic soda

Answer: B



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454. What is the end product of the following sequences

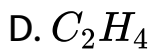
of operations : $\text{CaC}_2 \xrightarrow{\text{H}_2\text{O}}$

$\xrightarrow{\text{H}_2\text{SO}_4} \text{Hg}^{++} \xrightarrow{\text{H}_2} \text{Ni} \xrightarrow{\text{C}}$

A. Methyl alcohol

B. Acetaldehyde

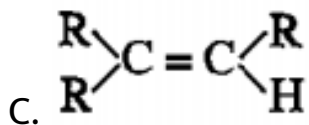
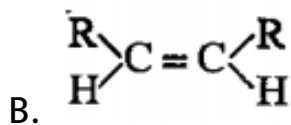
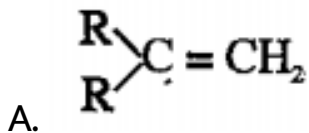
C. $\text{C}_2\text{H}_5\text{OH}$

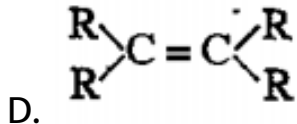


Answer: C

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455. The catalytic hydrogenation is more easier in case of which alkene :





Answer: B



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456. Gasoline is :



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

A. Methane

B. Ethane

C. Ethylene

D. Methanol

Answer: B



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458. When treated with ammoniacal cuprous chloride ,
which one among the following forms copper derivative?

A. C_2H_6

B. C_2H_4

C. C_2H_2

D. C_6H_6

Answer: C



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459. Reduction of 2-Butyne with Na in liquid NH_3 gives predominantly:

A. n-butane

B. Trans-2-butene

C. No reaction

D. Cis-2-butene

Answer: B



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460. Which one of the following has the smallest heat of hydrogenation per mole ?

- A. 1-butene
- B. trans -2-butene
- C. Cis-2-butene
- D. 1,3-butadiene

Answer: D



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461. Hydroxylation of propyne in the presence of $HgSO_4 / H_2SO_4$ is initiated by the attack of :

- A. Carbene
- B. Free radical
- C. Electrophile
- D. Nucleophile

Answer: C



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462. $RCOR$ is not converted to RCH_2R by:

- A. Wolff-Kishner reaction
- B. Clemmensen reduction
- C. Red P + HI at $200^{\circ}C$
- D. Wurtz reaction

Answer: D



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463. The compound having one isopropyl group is:

- A. 2,2,3,3-tetramethylpentane
- B. 2,2-dimethylpentane
- C. 2,2,3-trimethylpentane

D. 2-methylpentane

Answer: D



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464. Additional ICl on propene gives the product:

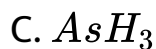


Answer: C



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465. Pure acetylene has sweet ethereal smell while impure smells like garlic due to presence of:



Answer: B



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466. Oil obtained from petroleum is called:

A. Essential oil

B. Vegetable oil

C. Mineral oil

D. Animal oil

Answer: C



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467. A knocking sound is produced more in the engine when the fuel contains mainly:

A. n-alkanes

B. CO_2

C. CO

D. Lubricating oil

Answer: A



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468. What volume of methane (NTP) is formed from 8.2 g of sodium acetate by fusion with soda lime:

A. 10 litre

B. 11.2 litre

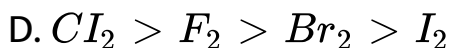
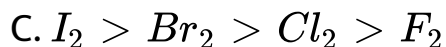
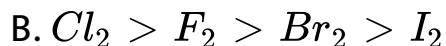
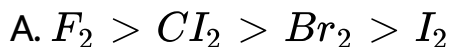
C. 5.6 litre

D. 2.24 litre

Answer: D

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469. When methane is made to react with a halogen (X_2), halides are formed, the order of reactivity is:



Answer: A

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470. Methane reacts with oxygen at 100 atm and $300^{\circ}C$ in presence of Cu to give:

- A. Acetaldehyde
- B. Methyl alcohol
- C. Acetic acid
- D. Ethyl alcohol

Answer: B



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471. An alkane of mol. Weight 72 gives on monochlorination only one product. Name the alkane:

- A. 2-methylbutane
- B. n-pentane
- C. 2,2-dimethylpropane
- D. None of these

Answer: C



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472. The reagent used in dehydrohalogenation process is:

A. Conc. H_2SO_4

B. P_2O_5

C. Al_2O_3

D. All of these

Answer: D



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473. Olefins are converted to paraffins by:

A. Hydrolysis

B. Halogenation

C. Dehydration

D. Hydrogenation

Answer: D



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474. Ozonolysis of propyne gives:

A. CH_3CHO

B. CH_3COCHO

C. HCHO

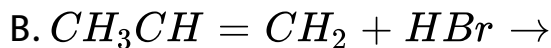
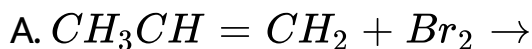
D. CHOCHO

Answer: B



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475. In which reaction addition takes place according to Markovnikov's rule:

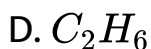
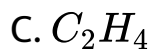
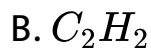


Answer: B



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476. The compound formed when silver powder is heated with chloroform:



Answer: A



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477. Conformation in molecules is due to:

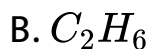
- A. Rotation about a single bond
- B. Change in direction of light
- C. Structural changes
- D. Restricted rotation about a double bond

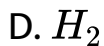
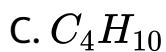
Answer: A



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478. Which cannot be prepared by Kolbe's electrolytic reaction using single salt?





Answer: C



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479. When butene-1 is mixed with HBr , the major reaction product is:

A. 1,2-dibromobutane

B. 1-bromobutane

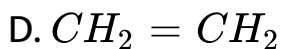
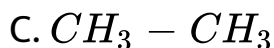
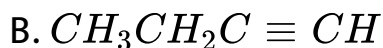
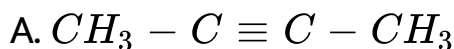
C. 2-bromobutane

D. None of these

Answer: B

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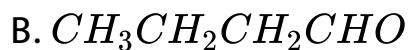
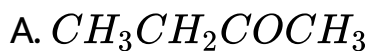
480. Which compound will react with an aqueous solution of $\text{Ag}(\text{NH}_3)_2^+ \text{OH}^-$



Answer: A

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481. The products obtained by means of $HgSO_4 + H_2SO_4$ from 1-butyne would be :



Answer: C



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482. Electrolysis of a concentrated solution of potassium acetate forms:

A. Ethylene

B. Acetylene

C. Ethane

D. Methane

Answer: D



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483. The conversion of liquid hydrocarbon into a mixture of gaseous compounds by heat alone is known as:

A. Hydrolysis

B. Reduction

C. Oxidation

D. Cracking

Answer: A



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484. Ethylene readily undergoes the following type of reaction:

A. Addition

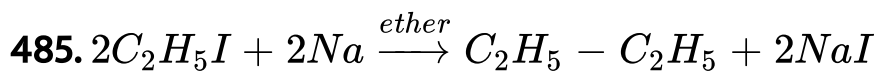
B. Substitution

C. Elimination

D. Rearrangement

Answer: C

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A. clemmensen reduction

B. Dow's reaction

C. Wurtz synthesis

D. Reimer-Tiemann's reaction

Answer: B

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486. Ethylene can be prepared by electrolysis of an aqueous solution of:

- A. Sodium acetate
- B. Sodium succinate
- C. Sodium fumarate
- D. Sodium propionate

Answer: C

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487. Photochemical chlorination of alkane is initiated by a process of:

A. Pyrolysis

B. Substitution

C. Homolysis

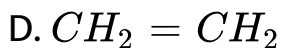
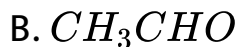
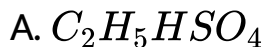
D. Peroxidation

Answer: B



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488. Acetylene reacts with 42% H_2SO_4 containing 1% $HgSO_4$ to give:



Answer: B



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489. Paraffin dissolves in:

A. Distilled water

B. Benzene

C. Methanol

D. Salt water

Answer: D



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490. Iso-octane is added to petrol:

A. To precipitate inorganic material

B. To prevent freezing of petrol

C. To increase the boiling point of petrol

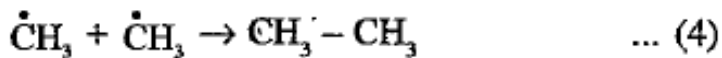
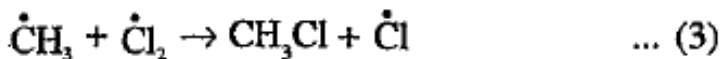
D. as an antiknocking agent

Answer: D



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491. In the following reaction sequence:



the termination step is :

A. Reaction 1

B. Reaction 2

C. Reaction 3

D. Reaction 4

Answer: A



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492. Ethyl hydrogen sulphate is obtained by reaction of

H_2SO_4 ON:

A. Ethylene

B. Ethane

C. Ethyl chloride

D. Ethanol

Answer: D



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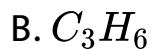
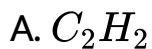
493. The product formed during the reaction $\text{CH} \equiv \text{CH} +$

$\text{Na} \xrightarrow{0^\circ\text{C}}$ is:



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494. Which compound does not decolourize bromine dissolved in carbon tetrachloride ?



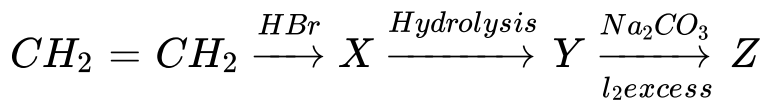
D. C_2H_4

Answer: C



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495. Identify Z in the following series,



A. C_2H_5I

B. C_2H_5OH

C. CHI_3

D. CH_3CHO

Answer: C



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496. A hydrocarbon containing 2 carbon atoms give Sabatier and Senderen's reaction but does not give precipitate with ammoniacal silver nitrate solution. The hydrocarbon in question is:

A. Ethane

B. Acetylene

C. Ethylene

D. None of these

Answer: B



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497. Which one of the following compounds does not give addition reaction?

A. Aldehydes

B. Alkanes

C. Alkenes

D. Alkynes

Answer: A



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498. Which compound on reductive ozonolysis forms only glyoxal:

A. Ethyne

B. Ethene

C. Ethane

D. 1,3-butadiene

Answer: C



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499. Methyl free radical involves:

- A. sp -hybridisation
- B. sp^2 -hybridisation
- C. sp^3 -hybridisation
- D. sp^3d -hybridisation

Answer: C



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500. Dilute aqueous $KMnO_4$ at room temperature reacts with $RCH = CHR$ to give:

- A. $RCHO$
- B. $RCOOH$

C. $RCHOHCHOHR$

D. $CO_2 + H_2O$

Answer: A

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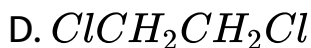
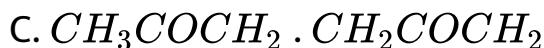
501. An alkyne, when added to a solution of $AgNO_3$ in NH_3OH forms a precipitate. The alkyne is a:

- A. Terminal alkyne
- B. Non-terminal alkyne
- C. both(a)and(b)
- D. None of these

Answer: A

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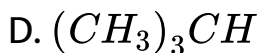
502. The reaction, $CH_2 = CH_2 + CH_3COCl \xrightarrow{AlCl_3}$
gives the product:



Answer: D

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503. The most reactive alkane is:



Answer: B



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504. The gas which is used for the artificial ripening of fruits is:

A. C_2H_6

B. C_2H_2

C. C_2H_4

D. Marsh gas

Answer: D



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505. The chemical reactivity of ethylene is due to:

A. Short carbon to carbon bond distance

B. High double bond energy

C. Trigonal planar structure

D. Presence of π -electrons

Answer: C



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506. Ethane can be freed (isolated) from the impurity of ethylene by washing with:

A. HCl

B. HNO_3

C. H_2SO_4

D. Water

Answer: C



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507. Incorrect name of an alkyne is:

A. Propyne

B. But-2-yne

C. Pent-3-yne

D. But-1-yne

Answer: D



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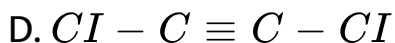
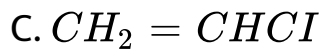
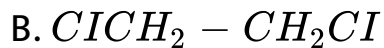
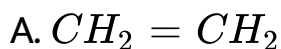
508. A compound with molecular formula C_4H_6 may contain:

- A. A double bond
- B. Two triple bond
- C. All single bonds
- D. Two double bonds or a triple bond

Answer: C

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509. PVC is a polymer of:

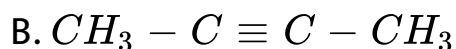
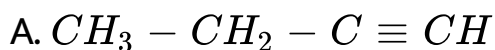


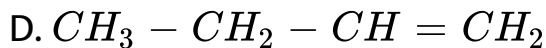
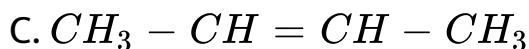
Answer: A



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510. Which hydrocarbon reacts with sodium and liquid NH_3 ?





Answer: B

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511. The reaction of ethene with oxygen in presence of a silver catalyst gives:

- A. Ethylene glycol
- B. Ethylene epoxide
- C. Glyoxal
- D. Acetaldehyde

Answer: B

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

- A. Methane
- B. Ethylene
- C. Acetylene
- D. Ethane

Answer: A

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513. Product formed when 1-butene is subjected to HBr in the presence of peroxide:

- A. 1-bromobutane
- B. 2-bromobutane
- C. 1,1-dibromobutane
- D. 1,2-dibromobutane

Answer: C



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514. Propyne on oxidation with SeO_2 gives:

A. CHOCHO

B. CH_3CH_2CHO

C. CH_3COCHO

D. $CHOCH_2CHO$

Answer: B



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515. In which of the following will Kharasch effect operate:

A. $CH_2CH_2CH = CH_2 + HCl$

B. $CH_3CH_2 - CH = CH_2 + HBr$

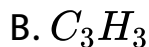
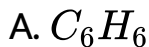


Answer: C



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516. The compound (i) decolourises $KMnO_4$ (ii) forms ozonide with ozone and (iii) undergoes polymerisation. It will be:



D. C_2H_6

Answer: A



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517. The reaction of HBr with propene in absence of peroxide is an example of

A. H^+

B. Br

C. H°

D. Br

Answer: D



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518. Which among the following are used as catalyst in cracking?

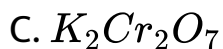
- A. Oxides of Al
- B. Oxide of Cr, Mo
- C. Oxide of V
- D. All of these

Answer: B



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519. Iodination of alkane is made in presence of:



D. None of these

Answer: D



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520. 2-methyl propene is isomeric with butene-1 They can be distinguished by:

A. Baeyer's reagent

B. Ammoniacal $AgNO_3$

C. Br_2 solution

D. o_3Zn / H_2O

Answer: D



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521. $C_2 - C_3$ bond length in buta-1,3-diene is:

A. $1.46\overset{\circ}{\text{A}}$

B. $1.20\overset{\circ}{\text{A}}$

C. $1.39\overset{\circ}{\text{A}}$

D. 1.34 \AA

Answer: B



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522. Vic- dihalide on treatment with zinc dust gives:

A. Alkane

B. Alkene

C. Alkyne

D. All of these

Answer: A



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523. Which of formed by the addition of halogen to alkenes?

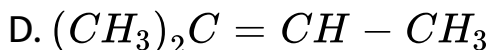
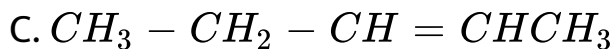
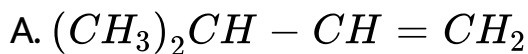
- A. Vic-dihalide
- B. Gem-dihalide
- C. Propane
- D. Propene

Answer: D



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524. The compound $(CH_3)_2CH - CHCl - CH_3$ reacts with alcoholic KOH to give the following alkene:



Answer: A



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525. Dehydrohalogenation of 1,2-dibromo-butane with alcoholic KOH gives:

A. 1-butyne

B. 2-butene

C. 1-butene

D. 1-bromo-1-butene

Answer: A



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526. Kolbe's synthesis of sodium salt of butanoic acid gives:

A. n-hexane

B. Isobutane

C. Butane-1

D. Ethylene

Answer: A

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527. The most stable conformational isomer of cyclohexane is:

A. Chair form

B. Boat form

C. Halfchair form

D. Twisted form

Answer: A

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528. The greatest strain is involved in cycloalkane when the bond angle is:

A. 60°

B. 90°

C. 120°

D. 108°

Answer: B

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529. In a mixture of iso - octane and n-heptane, the percentage of n-heptane is 10. The octane number of the fuel is:

- A. 110
- B. 90
- C. 10
- D. zero

Answer: B



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530. Which can be easily oxidised ?

A. Alkene

B. Alkyne

C. Alkane

D. Benzene

Answer: A



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531. The most stable isomer of 1,2-dichloroethane is:

A. Staggered

B. Gauche

C. Eclipsed

D. Partially eclipsed

Answer: B



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532. Sodium ethoxide is specific reagent for:

A. Dehydration

B. Dehydrohalogenation

C. Dehydrogenation

D. Dehalogenation

Answer: C

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533. Which of the following is not a mixture of hydrocarbons?

- A. Candle wax
- B. Kerosene
- C. Vegetable oils
- D. Paraffin oil

Answer: D

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534. Addition of O_2 on ethylene in presence of Ag at $200^\circ C$ forms:

- A. Epoxy ethane
- B. Oxiranes
- C. Cyclic ethers
- D. All of these

Answer: C



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535. Which of the following does not decolourise bromine solution in CS_2 ?

A. Acetylene

B. Propene

C. Ethane

D. Propyne

Answer: C



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536. Explain, why.

alkyl halides have higher boiling points than the

corresponding hydrocarbons?

A. Alkyne gt Alkane gt Alkene

B. Alkane gt Alkene gt Alkyne

C. Alkne gt Alkene gt Alkane

D. Alkene gt Alkyne gt Alkane

Answer: B



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537. Specific reagent for decarboxylation is:

A. $CaCO_3$

B. $CaO+NaOH$

C. NaOH

D. $CaCl_2$

Answer: D



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538. O_2 required for complete oxidation of 1 litre of ethane at NTP is:

A. 3.5 litre

B. 0.156 mole

C. 5.00 g

D. All of these

Answer: C



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539. Octane no of 2,2,4-trimethylpentane has been assumed to be:

A. 100

B. -45

C. 124

D. Zero

Answer: D



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540. Octane no of a fuel can be increased by:

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541. Sodium formate on heating with soda lime give:

A. CH_4

B. H_2O

C. H_2

D. All

Answer: D

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542. Electrolysis of a concentrated solution of sodium fumarate gives:

A. Fumaric acid

B. Ethylene

C. Ethane

D. Acetylene

Answer: C



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543. Both methane and ethane may be obtained in one step reaction from:



C. both(a)and(b)

D. None of these

Answer: C



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544. A mixture of CH_4 steam on passing over nickel suspension on alumina at $800^\circ C$ gives :

A. CH_3OH

B. CO_2 and H_2

C. CO and H_2

D. None of these

Answer: B



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545. The most stable conformation of butane is:

A. Skew

B. Staggered

C. Gauche

D. Eclipsed

Answer: A



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546. Lindlar's catalyst is:

A. $CaCO_3$

B. $Pd - BaSO_4$

C. Pd

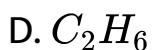
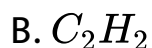
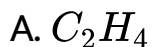
D. None of these

Answer: B



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547. Which organic compounds is used in welding?

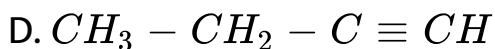
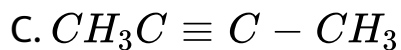
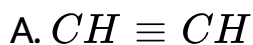


Answer: B



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548. The alkyne which gives pyruvic acid ($CH_3COCOOH$) on oxidation with alk $KMnO_4$ is:



Answer: B



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549. In a reaction if half of the double bond is broken and two new bonds are formed, this is a case of:

A. Elimination

B. Addition

C. Displacement

D. Rearrangement

Answer: A

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550. The formation of butane on heating C_2H_5I with Na in presence of ether is contaminated with impurities of:

A. C_2H_4

B. C_3H_6

C. CH_4

D. None of these

Answer: C



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551. Electrolysis of cold concentrated aqueous solution of potassium succinate yields:

A. Ethane

B. Ethyne

C. Propene

D. Ethane-1,2-diol

Answer: C



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552. During photochemical halogenation of alkanes the halogen molecule first gives:

- A. Chloride ion
- B. Chloronium ion
- C. Free radical
- D. Carbonium ion

Answer: C



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553. 1,1,2,2-tetra bromo ethane on heating with Zn powder in alcohol finally gives:

A. Methane

B. Ethane

C. Ethyne

D. Ethene

Answer: A



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554. Acetylene and ethylene reacts with alk $KMnO_4$ to give:

- A. Oxalic acid and formic acid
- B. Acetic acid and ethylene glycol
- C. Ethyl alcohol and ethylene glycol
- D. None of these

Answer: C



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555. Acetylene on passing into excess of HOCl solution forms:

- A. Ethylene chlorohydrin
- B. Acetaldehyde

C. Dichloroacetaldehyde

D. Methyl chloride

Answer: A

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556. The Cl-C-Cl angle in 1,1,2,2-tetra-chloroethene and tetrachloromethane respectively will be about:

A. 120° and 109.5°

B. 90° and 109.5°

C. 109.5° and 90°

D. 109.5° and 120°

Answer: D

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557. The reaction $RC \equiv CR \xrightarrow[H_2]{\text{Lindlar catalyst}}$

- A. Cis alkene
- B. Trans alkene
- C. Allkane
- D. None of these

Answer: C

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558. When ozone reacts with an olefin, the cleavage of the olefin across the double bond leads to the formation of:

- A. Aldehyde
- B. Ketone
- C. Both (a) and (b)
- D. Acid

Answer: B



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559. Decarboxylation of isobutyric acid leads to:

A. Isobutane

B. Propane

C. Butane

D. None of these

Answer: B



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560. Addition of one equivalent of bromine to 1,3-pentadiene produces:

A. 4, 5 dibromo-2-pentene

B. 1, 4-dibromo-2-pentene

C. 3, 4-dibromopentene

D. 3, 4-dibromo-2-pentene

Answer: D



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561. The presence of unsaturation (olefinic or acetylinic bond) in an organic compound can be tested with:

A. Schiff's reagent

B. Tollen's reagent

C. Fehling solution

D. Baeyer's reagent

Answer: B

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562. Which reagent can be used to convert, halides alcohols, carbonyl compounds, etc. to alkane?

A. Zn-Hg/HCl

B. Red P + HI

C. $LiAlH_4$

D. None of these

Answer: A

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563. The product formed when acetylene is passed through red hot tube is:

A. Benzene

B. Cyclohexane

C. Neoprene

D. Ethane

Answer: B



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564. Soda lime is used extensively in decarboxylation reaction to obtain alkanes. Soda lime is:

A. NaOH

B. NaOH and CaO

C. CaO

D. Na_2CO_3

Answer: B



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565. Ethyne reacts with dil H_2SO_4 in presence of $HgSO_4$ to give:

A. Ethanal

B. Acetaldehyde

C. Ethane

D. Ethene

Answer: B



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566. On ozonolysis one mole of a hydrocarbon yields 2 mole of formaldehyde. The hydrocarbon is:

A. But-2-ene

B. Ethylene

C. Propylene

D. Acetylene

Answer: C



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567. The most oxidised form of hydrocarbon is:

A. CO_2

B. RCHO

C. RCOOH

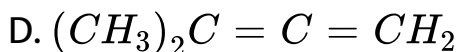
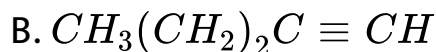
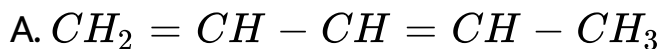
D. RCOCOOH

Answer: C

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568. The compound $X(C_5H_8)$ reacts with ammoniacal $AgNO_3$ to give a white precipitate and reacts with excess of $KMnO_4$ to give acid, $(CH_3)_2CH - COOH$.

Therefore, X is:



Answer: D

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569. When an aqueous solution containing sodium acetate and sodium propionate is electrolysed we get:

A. Ethane

B. Propane

C. Butane

D. All of these

Answer: B

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570. Action of copper alkyl on vinyl chloride gives:

A. Alkane

B. Alkene

C. Alkyne

D. All of these

Answer: B



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571. "The negative part of the addendum adds on the carbon atom joined to the least number of hydrogen

atoms." This statement is called:

A. Baeyer's strain theory

B. Markovnikov's rule

C. Thiele' theory

D. Peroxide effect

Answer: C



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572. Action of RMgX with vinyl chloride gives:

A. Alkane

B. Alkyne

C. Alkene

D. All of these

Answer: D



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573. Substitution reactions may be:

A. Free radical substitution

B. Nucleophilic substitution

C. Electrophilic substitution

D. All are correct

Answer: C

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574. Acetylene can be converted to higher alkyne using the following sequence of reaction:

- A. Na,RX
- B. RMgX, RX
- C. Either of these two
- D. None of these

Answer: A

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

- A. Vinyl cyanide
- B. 1,1-dicyanoethane
- C. 1,2-dichloroethene
- D. None of these

Answer: B



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576. Alkene-1 on hydroboration followed with action of H_2O_2 gives:

A. Alkanol-2

B. Alkanol-1

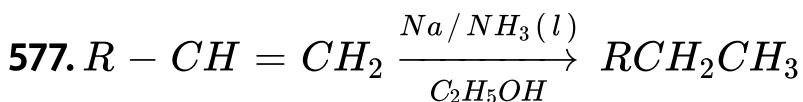
C. Alkanal

D. Alkanone

Answer: C



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A. Clemmensen reduction

B. Fisher-Spier reduction

C. Birch reduction

D. Arndt-Eistert reduction

Answer: A



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578. The reaction of alkanes with halogen is explosive in the case of:

A. F_2

B. Cl_2

C. I_2

D. Br_2

Answer: C



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579. The shape of ethylene molecule is:

A. Tetrahedral

B. Pyramidal

C. Planar

D. Linear

Answer: B

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580. Cetane number of diesel fuel increases with the addition of:

- A. Decane
- B. Hexadecane
- C. Pentane
- D. Methyl naphthalene

Answer: A

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581. A nucleophilic reagent would readily attack:

A. Carbonium ion

B. Carbanion

C. ethane

D. CH_4

Answer: C



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582. An alkyl halide may be converted into an alkene by which of the following reaction?

A. Electrophilic substitution

B. Nucleophilic addition

C. Elimination reaction

D. Hydrolysis

Answer: C



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583. Reactivity of halogens towards alkanes is in order

A. 'Butene \gt Propene \gt Ethene'

B. Butene \gt Ethene \gt Propene

C. Ethene \gt Propene \gt Butene

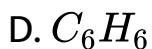
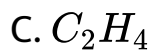
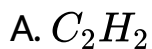
D. None of these

Answer: A



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584. Silver acetylide when heated with HCl gives:

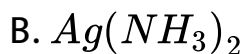
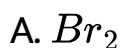


Answer: B



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585. Which reagent will quantitatively distinguish between butyne-1 and butyne-2?



Answer: C



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586. Octane number 116 is given for:

- A. 2,2,2-trimethyl pentane
- B. 2,3,4-trimethyl pentane
- C. 2,2,3-trimethyl butane
- D. 2,2,4-trimethyl butane

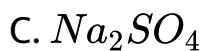
Answer: B



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587. In the Lassaigne's test the sulphur present in the organic compound first changes into?

- A. Na_2SO_3
- B. CS_2



Answer: D



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588. A compound which does not give a positive test in the Lassaigne's test for N is :

A. Hydrazine

B. Phenyl hydrazine

C. Urea

D. Azobenzene

Answer: D

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589. In sodium extract test of organic compounds, the nitrogen of an organic compound is converted into:

- A. Sodamide
- B. Sodium cyanide
- C. Sodium nitrite
- D. Sodium nitrate

Answer: B

 [Watch Video Solution](#)

590. The most suitable method of separation of 1 :1 mixture of ortho and para nitrophenols is:

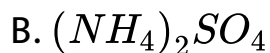
- A. Steam Distillation
- B. Crystallisation
- C. Sublimation
- D. Chromatography

Answer: A



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591. In Kjeldahl's method nitrogen present is quantitatively converted to :



D. None of these

Answer: B



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592. In Lessaigne's test for N,S and halogens, the organic compound is:

- A. Fused with sodium
- B. Dissolved with sodamide
- C. Extracted with sodamide
- D. Fused with calcium

Answer: A



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593. In Lassaingne's test for nitrogen, the blue colour is due to the formation of:

- A. Ferric ferrocyanide
- B. Potassium ferrocyanide

C. Sodium ferrocyanide

D. Sodium cyanide

Answer: A



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594. There are several criteria of purity of organic compounds. Which is considered to be the best:

A. Melting point

B. Mixed melting point

C. Colour

D. Microscopic examination

Answer: B

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595. In Lassaigne's test when both N and S are present, blood red colour obtained is due to the formation of:

- A. Ferric ferrocyanide
- B. Ferric thiocyanate
- C. Ferric cyanide
- D. None of these

Answer: B

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596. A mixture of camphor and benzoic acid can be separated by:

- A. Sublimation
- B. Chemical methods
- C. Fractional crystallisation
- D. Ectraction with solvent

Answer: B



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597. In Kjeldahl's method of estimation of nitrogen, K_2SO_4 acts as:

- A. Oxidising agent
- B. Catalytic agent
- C. Hydrolysing agent
- D. Boiling point elevator

Answer: D



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598. When petroleum is heated gradually, first batch of vapours evolved will be rich in:

A. Kerosene

B. Petroleum ether

C. Diesel

D. Lubricating oil

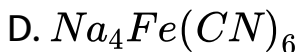
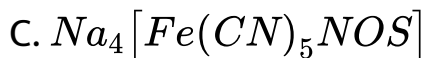
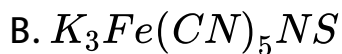
Answer: B



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599. For detection of sulphur in an organic compound, sodium nitroprusside is added to the sodium extract. A violet colour is obtained due to the formation of:

A. $Fe(CN)_2$



Answer: C



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600. The organic compound which does not give blue colour in Lassaigne's test is:

A. Aniline

B. Glycine

C. Hydrazine

D. Urea

Answer: C



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601. Some organic compounds are purified by distillation at low pressure because the compounds are:

- A. Low boiling liquids
- B. High boiling liquids
- C. Highly volatile
- D. Dissociated before reaching their boiling points

Answer: D



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602. Raw juice in sugar factories is generally concentrated by:

A. Vacuum distillation

B. Steam distillation

C. Sublimation

D. Crystallisation

Answer: A



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603. Which is useful for separating benzoic acid from methyl benzoate?

A. $\text{NaHCO}_3(\text{aq})$

B. Dil. HCl

C. Dil. H_2SO_4

D. Dil. HNO_3

Answer: A



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604. Which of the following reagents is useful for separating aniline from a mixture of aniline and

nitrobenzene?

A. $\text{NaOH}(\text{aq})$

B. H_2O

C. $\text{NaHCO}_3(\text{aq})$

D. $\text{HCl}(\text{aq})$

Answer: D



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605. Which of the following is purified by vacuum distillation?

A. Glycerine

B. Glycerol

C. Propane-1,2,3-triol

D. All of these

Answer: D



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606. Turpentine oil can be purified by:

A. Vacuum distillation

B. Fractional distillation

C. Steam distillation

D. Simple distillation

Answer: C



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607. To determine the weight of halogen in the organic compound, the compound is heated with fuming HNO_3 in presence of:

A. Ag

B. $AgNO_3$

C. $AlCl_3$

D. Ag_2SO_4

Answer: B





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608. Halogens can be estimated by:

- A. Duma's method
- B. Carius method
- C. Leibig's mehtod
- D. None of these

Answer: B



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609. The latest technique used for the purification of organic compounds containing minute quantities is:

- A. Distillation
- B. Sublimation
- C. Chromatography
- D. Crystallisation

Answer: C



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610. The substance used as an adsorbent in the column chromatography is:

A. Na_2O

B. Na_2SO_4

C. Al_2O_3

D. Alum

Answer: C



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611. Separation of organic compounds by column chromatography is due to:

A. Selective adsorption

B. Selective absorption

C. Solubilities

D. Selective adsorption and selective absorption

Answer: A

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612. For a compound to be purified by steam distillation :

A. Impurities must be non-volatile

B. The liquid must be completely immiscible with
water

C. The vapour pressure of the liquid must be
sufficiently high

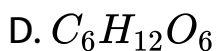
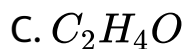
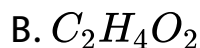
D. All are correct

Answer: D



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613. An organic contains $C = 40\%$, $O = 53.5\%$ and $H = 6.5\%$. The empirical formula of the compound is :



Answer: A



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614. The nitrogen content in the proteins can be quantitatively estimated by :

- A. Carius method
- B. Kjeldahl's method
- C. Victor Meyer's method
- D. Rast method

Answer: B



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615. In the estimation of nitrogen by Duma 's method 0.59 g to organic compound gave 112 mL nitrogen at NTP .The percentage of nitrogen in the compound is about :

A. 23.7

B. 11.8

C. 20

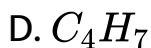
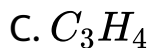
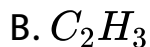
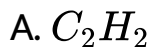
D. 47.5

Answer: A



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616. 13 g of a hydrocarbon contains 1.0g of hydrogen. Its formula is :



Answer: A



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617. 0.58 g of hydrocarbon on combustion gave 0.9 g water. The percentage of carbon is about :

A. 75.8

B. 82.7

C. 27.85

D. 68.8

Answer: B



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618. In kjeldahl's method of estimation of nitrogen, copper sulphate acts as :

A. Oxidising agent

B. Silver spiral

C. Catalytic agent

D. Hydrolysing agent

Answer: C

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619. The function of boiling the sodium extract with conc.

HNO_3 before testing for halogens is :

A. To make solution clear

B. To destroy CN^- and S^{2-} ions which will otherwise
give ppt.

C. To make the solution acidic

D. To convert $Fe^{2+} \rightarrow Fe^{3+} +$

Answer: B



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620. Positive Beilstein test shows that :

A. Halogens are surely present

B. Halogens are absent

C. Halogens may be present

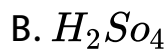
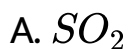
D. None of the above

Answer: C



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621. The sulphur present in an organic compound is oxidised by fuming nitric acid into :

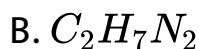
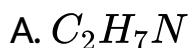


Answer: B



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622. An organic compound containing C,H and N have the percentage 40,13.33 and 46.67 respectively. Its empirical formula may be :

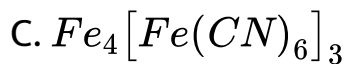
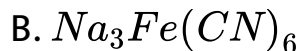
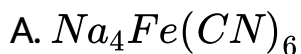


Answer: C



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623. Prussian blue is formed when :



D. None of these

Answer: C



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624. In Duma's method for determining the nitrogen content of an organic compound, the nitrogen content is determined in the form of :



B. NaCN

C. Gaseous. N_2

D. $(NH_4)_2SO_4$

Answer: C



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625. Simple distillation is used to separate liquids which differ in their boiling point by :

A. $5^\circ C$

B. $10^\circ C$

C. $30^\circ - 80^\circ C$

D. Less than 20°C

Answer: C



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626. The presence of carbon in an organic compound can be shown by :

A. Heating with copper which goes black

B. Burning it to produce which goes black

C. Heating it with copper oxide to convert it into CO_2

D. None of the above

Answer: C



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627. Impure glycerine can be purified by :

- A. Steam distillation
- B. Vacuum distillation
- C. Simple distillation
- D. Extraction with a solvent

Answer: B



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628. In organic compound phosphorus is estimated as :

A. Magnesium pyrophosphate $Mg_2P_2O_7$

B. H_3PO_4

C. $Mg_3(PO_4)_2$

D. P_2O_5

Answer: A



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629. In the estimation of nitrogen by Duma 's method 1.18 g of an organic compound gave 224 mL of N_2 at NTP. The percentage of nitrogen in the compound is about :

A. 20

B. 11.8

C. 47.5

D. 23.7

Answer: D



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630. 0.20 g of a hydrocarbon on combustion gave 0.66 g CO_2 . The percentage of hydrogen in the hydrocarbon is about :

A. 33

B. 45

C. 10

D. 90

Answer: C

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631. An organic compound is fused with fusion mixture and extracted with HNO_3 . The extract gives yellow precipitate with ammonium molybdate. It shows the presence of which element :

A. P

B. As

C. Both P and As

D. May be p or As or both

Answer: D



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632. 0.5 g of an organic compound containing nitrogen on Kjeldahlising required 29 mL of $N/5H_2SO_4$ for complete neutralisation of ammonia. The percentage of nitrogen in the compound is :

A. 34.3

B. 16.2

C. 21.6

D. 14.8

Answer: B



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633. Ellution is the process for :

A. Crystallisation of compound

B. Separation of compound

C. Extraction of compound

D. Distillation of compound

Answer: B



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634. Sublimation method can be used for the purification of :

A. Naphthalene

B. Benzoic acid

C. Camphor

D. All of these

Answer: D



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635. In Lassaigne's test sodium metal is used because :

- A. It is very reactive
- B. Its melting point is low
- C. Its compounds are soluble in water
- D. All of these

Answer: D



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636. Kjeldahl 's method cannot be used for the estimation of nitrogen in :

A. Pyridine

B. Nitrocompounds

C. Azo compounds

D. All of these

Answer: D



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637. There is no test (Direct) for the detection of following in an organic compound:

A. Cl

B. N

C. S

D. O

Answer: D



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638. Carbon and hydrogen are estimated by :

A. Liebig's method

B. Carius method

C. Duma's method

D. None of the above

Answer: A

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639. In kjeldahl's method ,nitrogen present is estimated as :

A. N_2

B. NH_3

C. NO_2

D. None of these

Answer: B

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640. Petroleum refining involves:

- A. Vacuum distillation
- B. Steam distillation
- C. Fractional distillation
- D. Passing over activated charcoal

Answer: C



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641. In paper chromatography:

- A. Mobile phase is liquid and stationary phase is solid

B. Mobile phase is solid and stationary phase is liquid

C. Both phases are solids

D. Both phases are liquids

Answer: A



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642. The most satisfactory method of separating sugars from each other is :

A. Fractional crystallisation

B. Sublimation

C. Chromatography

D. Benedict solution

Answer: C



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643. Absolute alcohol cannot be obtained by simple fractionation of solution of ethanol and water because:

- A. Boiling point are very near
- B. Ethanol remains dissolved in water
- C. They form a constant boiling mixture
- D. Ethanol molecules are solvated

Answer: C



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644. Anthracene is purified by :

- A. Filtration
- B. Crystallisation
- C. Distillation
- D. Sublimation

Answer: D



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645. An organic substance from its aqueous solution can be separated by :

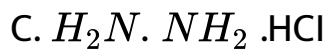
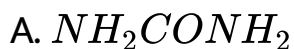
- A. Solvent extraction
- B. Steam distillation
- C. Distillation
- D. Fractional distillation

Answer: A



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646. Lassaigne's test for the detection of nitrogen will fail in case of :



Answer: C



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647. Which reagent is useful in separating benzoic acid from phenol ?

A. Dilute HCl

B. Dilute H_2SO_4

C. 5%NaOH

D. 5% $NaHCO_3$

Answer: D



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648. One having high vapour pressure at temperature below its melting point:

A. Benzoic acid

B. Salicylic acid

C. Citric acid

D. All of these

Answer: A

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649. A mixture of camphor and KCl can be separated by :

A. Sublimation

B. Evaporation

C. Filtration

D. Decantation

Answer: A

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650. Salts can be obtained from a concentrated sea water by :

- A. Catalyst
- B. Evaporation
- C. Hydrolysis
- D. Crystallisation

Answer: D



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651. Silica gel is used for keeping away the moisture because it :

A. Absorbs H_2O

B. Adsorbs H_2O

C. Reacts with H_2O

D. None

Answer: B



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652. Two substances when separated out on the basis of their extent of adsorption by one material, the phenomenon is :

A. Column chromatography

B. Paper chromatography

C. Sublimation

D. Steam distillation

Answer: A



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653. Fuels from crude oil are separated from one another

by :

A. Fractional crystallisation

B. Crystallisation

C. Steam distillation

D. Selective adsorption

Answer: A



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654. Sodium extract prepared by using thiourea contains which ion in the solution, mainly responsible for a characteristic test:

A. NaCN

B. Na_2S

C. NaCNS

D. Na_2SO_4

Answer: C



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655. Copper wire test of halogens is known as :

- A. Beilstein test
- B. Liebig's test
- C. Lassigne 's test
- D. Fusion test

Answer: A



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656. An organic compound X contains Y and Z impurities. Their solubility differs slightly. They may be separated by :

- A. Simple crystallisation
- B. Fractional crystallisation
- C. Sublimation
- D. Fractional distillation

Answer: B



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657. An organic compound contains C, H and S. When C and H are estimated the combustion tube at the exit should contain a :

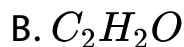
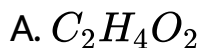
- A. Copper spiral
- B. Silver spiral
- C. Potassium chloride
- D. Lead chromate

Answer: D



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658. A compound (60 g) on analysis gave C = 24 g, H = 4 g and O = 32 g. Its empirical formula is :



Answer: D



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659. 0.2 g of an organic compound containing C, H and O, on combustion yielded 0.147 g CO_2 and 0.12 g water. The

percentage of oxygen in it is :

A. 73,29%

B. 0.7845

C. 0.8323

D. 0.895

Answer: A



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660. The sodium extract on acidification with acetic acid and then adding lead acetate solution gives a black precipitate. The organic compound contains:

A. Nitrogen

B. Halogens

C. Sulphur

D. Phosphorus

Answer: C

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661. In estimation of carbon and hydrogen ,the saphnolite resin absorbs :

A. N_2

B. H_2O_2

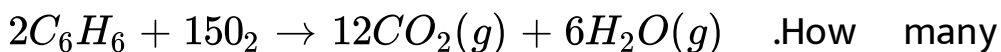
C. CO_2

D. CO_2 and H_2O_2

Answer: C

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662. Liquid benzene burns in oxygen according to :



litre of O_2 at STP are needed to complete the

combustion of 39 g of liquid benzene:

A. 11.2 litre

B. 22.4 litre

C. 84 litre

D. 74 litre

Answer: C

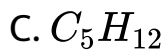


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663. 500mL of a hydrocarbon gas burnt in excess of oxygen yielded 2500 mL of C_{O_2} and 3.0 liter of water vapour (all volumes measured at the same temperature and pressure). The formula of the hydrocarbon is :

A. C_3H_6

B. C_2H_4

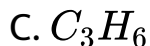
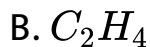


Answer: C



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664. 15 mL of a gaseous hydrocarbon required 45 mL oxygen for complete combustion .30 mL of CO_2 is formed. The formula of the hydrocarbon is :



D. C_2H_2

Answer: B



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665. An organic compound has C and H percentage in the ratio 6 : 1 and C and O percentage in the ratio 3 : 4 .The compound is :

A. HCHO

B. CH_3OH

C. CH_3CH_2OH

D. $(COOH)_2$

Answer: A

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666. If the compound contains C,H and halogen. When C and H are to be estimated the combustion tube at the exit should contain a :

- A. Copper spiral
- B. Silver spiral
- C. Lead spiral
- D. Iron Spiral

Answer: B





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667. In organic chemistry the element which is estimated by difference :

A. N

B. O

C. S

D. H

Answer: B



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668. Steam distillation is a better method of purification for ... compounds:

- A. Liquids
- B. Steam volatile
- C. Non-volatile
- D. Miscible with water

Answer: B



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669. Boiling point of a Compound does not depend on :

A. Hydrogen bonding in the compound

B. Solubility of the compound in water

C. Size of the molecule

D. Polarity of the molecule

Answer: B



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670. Fractional distillation is used to separate liquids which differ in their in boiling point by :

A. $5^{\circ} C$

B. $10^{\circ} C$ to $20^{\circ} C$

C. $30^{\circ}C$ to $80^{\circ}C$

D. None of these

Answer: B

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671. Distillation under reduced pressure is used to purify liquids which :

A. Are explosives

B. Are highly volatile

C. Decompose below their boiling point

D. Have high boiling point

Answer: C



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