



CHEMISTRY

BOOKS - OMEGA PUBLICATION

HYDROCARBONS

Questions

1. Name the different types of teeth.



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2. What is structural isomerism ? Give an example.



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3. What are alkanes ? Name the type of isomerism exhibited by alkanes.



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4. Name two foods rich in starch?



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5. Name two foods rich in dietary fibre?



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6. How do you account for the formation of ethane during chlorination of methane?



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7. What is hydrogenation? what is its industrial application?



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8. Which disease is caused by the deficiency of vitamin D?



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9. name two sources of vitamin B1?



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10. How will you convert ethyl chloride into ethane ?



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11. Write chemical equation for combustion reaction of the following hydrocarbon:

Butane



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12. Write chemical equation for combustion reaction of the following hydrocarbon:

Pentene



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13. Write chemical equation for combustion reaction of the following hydrocarbon:

Hexyne



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14. Write chemical equation for combustion reaction of the following hydrocarbon:

Toluene



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15. Convert the following :

Ethyl bromide into butane



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16. Convert the following :

Ethanol into diethyl ether



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17. Convert propene into n-propyl bromide.



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18. Explain the following reactions :

Kolbe's reaction.



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19. Write Wurtz reaction.



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20. Give one example of the following :

Polymerisation reaction.



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21. Give one example of the following :

Decarboxylation reaction.



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22. How will you convert methane to ethane ?



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23. How will you convert ethane to butane ?



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24. Branched chain alkanes have lesser boiling point than straight chain alkanes. Explain.



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25. Alkanes with even carbon atoms have higher melting point than immediately next lower alkanes with odd number of carbon atoms. Explain.



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26. Give the substitution reactions of alkanes.



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27. What do you mean by aromatization ?



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28. Define the term- Nutrients and name some important nutrients needed by our body?





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29. Define cracking or pyrolysis with an example.



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30. What is the purpose of cracking ?



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31. Explain the term reforming.



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32. what is the function of proteins in our body?



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33. What are antiknocking compounds ? Give one example.



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34. which vitamin is not present in milk?



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35. Which compound has octane number zero ?

A. (a) iso octane

B. (b) n-octane

C. (c) n-heptane

D. (d) tetraethyl lead

Answer:



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36. Draw the lewis dot structure of the following molecules : hydeogen sulphide (H_2S)



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37. Draw the lewis dot structure of the following molecules : ammonia (NH_3)



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38. The ionization energy of H atom is 13.6 eV. what is the energy of Li^{2+} ion in first excited state.



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39. What is the main constituent of LPG ?



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40. which vitamin is prepared by our body in the sunlight?



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41. Define the term conformation and discuss the different conformations of ethane.



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42. Stunted growth, swollen face, discoloration of hair and skin diseases are the symptoms caused by the deficiency of which nutrient in the body?



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43. Can eclipsed and staggered conformations of ethane be isolated ? Give reason.





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44. Write a note on geometrical isomerism.



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45. Write a note on geometrical isomerism.



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46. What are the necessary and sufficient conditions for geometrical isomerism ?



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47. Name two plant food items which provide protein?



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48. Draw the cis and trans structure of Hex-2-ene. Which isomer will have higher boiling point and why?



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49. People who eat sea food don't suffer from goiter. Explain?



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50. trans-But-2-ene has higher melting point than cis-But-2-ene. Explain.



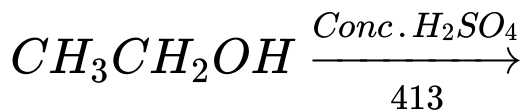
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51. cis-isomer has more dipole moment than trans-isomer. Explain.



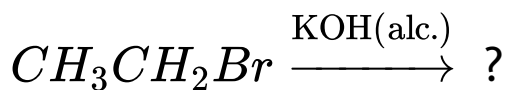
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52. Complete the following reaction:



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53. Complete the reaction:



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54. What happens when ethanol is heated in the presence of Al_2O_3 at 620 K ?



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55. Write the chemical equations for the combustion of Hexyne?



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56. Propanal and pentan-3-one are the ozonolysed products of an alkene. What is the structural formula of the alkene ?



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57. Arrange the followings: HCl, HBr, HI, HF in order of decreasing reactivity towards alkenes.



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58. How alkenes are prepared from vicinal dihalides?



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59. What will happen when potassium chlorate is heated in presence of manganese dioxide catalyst?



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60. Write a balanced equation for the following reaction : Methane burns in oxygen to form carbon dioxide and water.



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61. Write electronic configuration of Ni^{3+} .



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62. What is Anti Markownikov's Rule ?



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63. Explain the addition reaction of alkene.



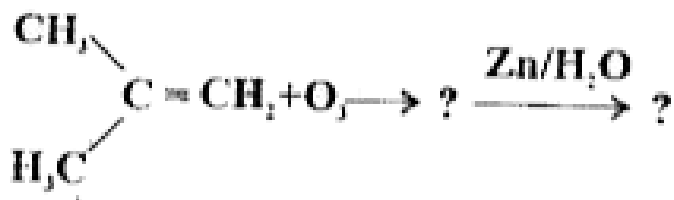
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64. What do you mean by ozonolysis ?



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65. Complete the reaction



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66. What is Baeyer's reagent ?



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67. Give chemical equation of the reaction when ethene reacts with oxygen in the presence of Ag at 575 K.



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68. Why are alkenes called olefins ?



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69. What is meant by hydroboration -oxidation reaction . Illustrate with an example .



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70. Give the oxidation reaction of alkenes with
:

cold dilute potassium permanganate
($KMnO_4$)



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71. Give the oxidation reaction of alkenes with :
hot potassium permanganate solution (
 $KMnO_4$)



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72. How will you prepare acetylene in the
laboratory?



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73. Give various methods of preparation of alkynes.



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74. Give three examples of irreversible changes?



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75. Why alkynes are more acidic than alkenes and alkanes ?



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76. Is geometrical isomerism possible around triple bond ?



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77. Why the melting and boiling points of alkynes are higher than alkenes and alkanes?



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78. What happens when acetylene is treated with acetic acid in presence of Hg^{2+} ions at 353K ?



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79. How will you convert Ethene into ethyne ?



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80. How will you convert:

Propene to 2, 3-dimethylbutane



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81. What happens when acetylene is passed through red hot iron tubes at 873 K?



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82. What happens when ethyne is treated with water in the presence of H_2SO_4 and $HgSO_4$ at 333-348K?



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83. What happens when ethyne is treated with cold dil. $KMnO_4$.



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84. What happens when ethyne is treated with ozone followed by reduction with Zn and water.



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85. Why alkynes undergo nucleophilic addition reaction while simple alkenes do not ?



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86. Describe orbital picture of benzene.



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87. How would you convert the following compound into benzene ?

Ethyne



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88. How would you convert the following compound into benzene ?

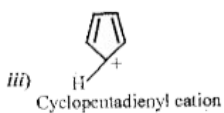
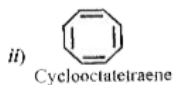
Hexane

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89. What is periodicity? What is the cause of periodicity?

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90. Which of the followings are aromatic ?



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91. Why is benzene extraordinarily stable through it contains three double bonds?



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92. Why are all C-C bond lengths in benzene equal?



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93. How benzene can be prepared by reduction of phenol ?



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94. Give chemical reaction of the following :

Decarboxylation of aromatic acids



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95. Write the following reaction:

Wurtz Fittig Reaction



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96. How will you convert benzene into the following

p- Nitro bromo benzene



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97. How will you convert benzene into the following

m- Nitro chloro benzene



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98. How will you convert benzene into the following

p- Nitro toluene



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99. How will you convert benzene into Nitrobenzene ?



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100. How will you convert benzene into Benzene sulphonic acid ?



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101. What happens when benzene is treated with methyl chloride in the presence of anhydrous $AlCl_3$?



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102. What happens when benzene is treated with acetyl chloride in the presence of anhydrous $AlCl_3$?



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103. What happens when benzene is treated with chlorine in the presence of sunlight ?



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104. How is B.H.C. prepared from benzene ?
Give its use.



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105. How will you convert benzene into Chlorobenzene ?



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106. Haloalkanes undergo nucleophilic substitution reactions while haloarenes undergo electrophilic substitution reactions. Explain.



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107. Give the mechanism of sulphonation of benzene.



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108. What happens when benzene is heated in air ?



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109. Toluene can be nitrated more easily than benzene. Explain.



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110. What happens when toluene is heated with alkaline $KMnO_4$?



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111. Why is benzene less reactive than cyclohexane?



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112. Out of benzene, m-dinitrobenzene and toluene, which will undergo nitration most easily and why?



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113. Why does benzene undergo electrophilic substitution reaction easily and nucleophilic substitution with difficulty ?



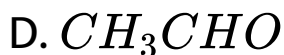
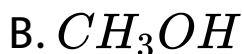
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114. What are carcinogenic hydrocarbons ?
Also give their examples.



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1. Both methane and ethane can be prepared in single step by the use of



Answer: C



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2. Alkyl halides react with Mg in dry ether to form

A. Magnesium halide

B. Grignard's reagent

C. Alkene

D. Alkyne

Answer: B



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3. Which of the following metal can be used for carrying out Wurtz-Fittig reaction ?

A. Sodium

B. Mercury

C. Radium

D. Any of these

Answer: A



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4. The most stable conformation of n-butane is

A. skew boat

B. eclipsed

C. gauche

D. staggered or anti

Answer: D



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5. Wurtz reaction involves the interaction of alkyl halides in dry ether with

A. sodium

B. zinc

C. copper

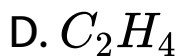
D. platinum

Answer: A



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6. Successive alkanes differ by



Answer: A



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7. What are the functions of minerals in our body?



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8. The rational number that does not have a reciprocal.

A. catalytic hydrogenation of alkenes

B. wurtz reaction

C. hydrolysis of alkyl magnesium bromide

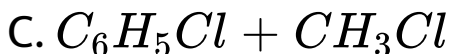
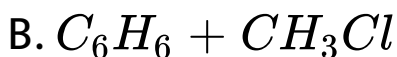
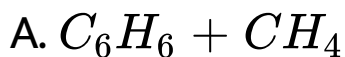
D. dehydrohalogenation of an alkyl halide

Answer: C



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9. In the Friedel-Crafts synthesis of toluene, reactants in addition to anhydrous $AlCl_3$ are





Answer: B



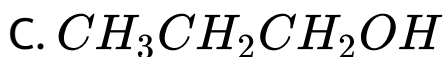
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10. Write any two functions of water in our body?



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



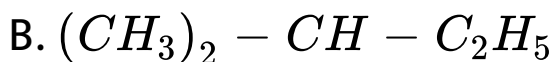
D. all of these

Answer: A



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12. Point out the compound out of the following which has the lowest boiling point ?



D. The boiling point cannot be predicted from their structures

Answer: C



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13. What are deficiency diseases?



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14. Give one example of slow change and fast change?



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15. A doctor has recommended you to maintain a diet plan for your good health. he

has given you a balanced diet chart. What is balanced diet and what are the components of balanced diet?



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16. Baeyer's reagent is

A. alkaline $KMnO_4$

B. acidified $KMnO_4$

C. neutral $KMnO_4$

D. aqueous bromine solution

Answer: A



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17. Alkaline $KMnO_4$ oxidizes acetylene to

- A. acetic acid
- B. glyoxal
- C. oxalic acid
- D. ethylene glycol

Answer: C



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18. Describe any two functions of stem of a plant?



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19. What is reticulate venation and give examples?



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20. The highest boiling point is expected for

A. iso-octane

B. n-octane

C. 2,2,3-trimethylbutane

D. n-butane

Answer: B



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21. Conversion of acetylene to benzene is an example of

- A. cyclization
- B. polymerization
- C. hydrogenation
- D. none of these

Answer: B



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22. Electrolytic decarboxylation of sodium propionate produces

A. propane

B. ethane

C. methane

D. butane

Answer: D



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23. Which type of reaction is not shown by

C_2H_4 at all ?

A. Addition

B. Substitution

C. Oxidation

D. Elimination

Answer: B



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

A. $LiAlH_4$

B. Na and alcohol

C. Red P and HI

D. $Zn + HCl$

Answer: C



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