



# CHEMISTRY

## BOOKS - ARIHANT PUBLICATION

### JHARKHAND

## HYDROCARBONS

### Exam Booster For Cracking Exam

1. Which organic compound was synthesised in the laboratory for the first time?

A. Methane

B. Urea

C. Acetic acid

D. Methyl alcohol

**Answer: B**



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2. Hydrogen reacts with ethene by  $200^{\circ} - 300^{\circ} C$  to form ethane

A. In the presence of catalyst

B. when their mixture is passed over Ni powder

C. when they are compressed to 20 atm

D. when both are at atmospheric pressure

**Answer: B**



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**3. Organic compounds mainly contains**

A. C, H, O

B. C,O,N

C. N,C,S

D. C,P,N

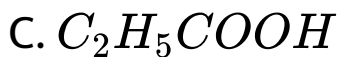
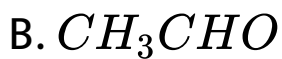
**Answer: A**



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**4. Methane on oxidation with ozone gives**

A.  $C_2H_5OH$

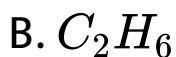
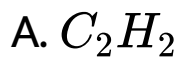


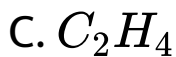
**Answer: D**



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**5. The molecular formula of ethylene is**





**Answer: C**



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6. The series of  $C_2H_2$  and its IUPAC name is

A. alkyne and fuel

B. alkyne and ethyne

C. alkene and fuel

D. alkene and ethyne

**Answer: B**



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7. The compound  $C_4H_6$  contains bonds between C and C

A. all single bonds

B. one triple bond and one double bond

C. one double bond

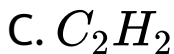
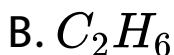
D. one single bond and two double bonds

**Answer: D**

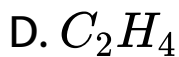


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**8.** When potassium acetate is electrolysed, we get





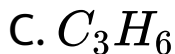
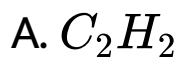


**Answer: B**



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9. On heating sodium acetate with sodalime the gas evolved will be



D.  $C_3H_4$

**Answer: B**



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**10.** When ethane is heated with air at  $500^\circ\text{C}$ , we get

A. ethylene and hydrogen

B. acetaldehyde

C. carbon dioxide and water

D. None of these

**Answer: C**



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**11. Which is an aromatic compound?**

A. Methane

B. Cyclobutane

C. Benzene

D. Methyl alcohol

**Answer: C**



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**12.** A sample of petrol contains 30% n-heptane.

Its octane number is

A. 30

B. 70

C. 15

D. 45

**Answer: B**



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**13.** Which of the following statements is incorrect for a homologous series?

A. There is a difference of  $CH_3$  between two consecutive homologous

B. Most of the members of a homologous series are prepared by similar methods

C. The members may be represented by a  
general formula

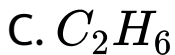
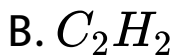
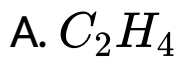
D. None of the above

**Answer: A**



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**14.** Which of the following gives white precipitate with ammoniacal  $AgNO_3$  solution?



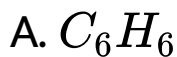
**Answer: B**



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**15.** Alkenes from the following list of hydrocarbon are





**Answer: C**



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**16.** Which of the following pair of compounds react with bromine water?



A.  $CH_4$  and  $C_2H_6$

B.  $CH_4$  and  $C_2H_4$

C.  $C_2H_4$  and  $C_2H_2$

D. None of these

**Answer: C**



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17. In the laboratory method for the preparation of  $C_2H_2$ , the impurities like

$NH_3$ ,  $H_2S$ ,  $AsH_3$  and  $PH_3$  are removed by passing the gas through

- A. caustic soda solution
- B. acidic  $CuSO_4$  solution
- C. water
- D. None of these

**Answer: B**



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18. IUPAC name of  $CH_3 - C \equiv CH$  is

A. propane

B. propene

C. propanol

D. propyne

**Answer: D**



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19. Which of the following reagents does not give addition reaction with acetylene?

A. Acidic  $KMnO_4$

B.  $Cl_2$

C. Ammonical  $Cu_2Cl_2$

D. None of these

**Answer: C**



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20. Ethylene reacts with alkaline (Baeyer's reagent) to form

A. oxalic acid

B. acetic acid

C. glycerol

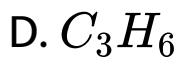
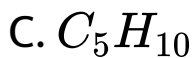
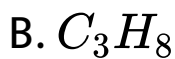
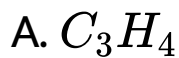
D. glycol

**Answer: D**



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21. The example of alkyne is



**Answer: A**



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22. The negative part of the addendum adds on to the carbon atom joined to the least number of hydrogen atoms. This statement is called.

- A. Thiele's theory
- B. Baeyer's strain theory
- C. Markovnikov's rule
- D. Peroxide effect

**Answer: C**



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23. The homologous series and IUPAC name of

$C_2H_4$  is

A. alkyne and ethane

B. alkyne and ethyne

C. alkene and ethene

D. alkene and ethyne

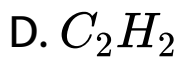
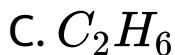
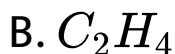
**Answer: C**



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24. Ethyl alcohol is heated with conc.  $H_2SO_4$  at  $170^\circ C$ . The product formed is:



**Answer: B**



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25. Which of the following is heterocyclic compound?

A. Methane

B. Methyl alcohol

C. Cyclobutane

D. Pyridine

**Answer: D**



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26. Which has the highest calorific value?

A. Kerosene

B. Biogas

C. Ethanol

D. Butane

**Answer: D**



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

A. methane

B. ethane

C. ethylene

D. acetylene

**Answer: D**



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28. Acetylene is obtained from  $CaC_2$

A. by treating it with cold water

B. heating it at  $140^\circ C$  in the presence of



C. by passing  $H_2$  over it at  $1200^\circ C$

D. by passing vapours over it at  $100^\circ C$

**Answer: A**



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29. The IUPAC name of  $CH_3OH$  is

- A. methanol
- B. methyl alcohol
- C. methanal
- D. hydroxy methane

**Answer: A**



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**30.** Both aliphatic and aromatic compounds are present in the pair

A. benzene, phenol

B. isobutane, methane

C. ethane, methane

D. Isobutane, chlorobenzene

**Answer: D**



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31. Heterocyclic compound is

A. furan

B. toluene

C. chlorobenzene

D. cyclopropane

**Answer: A**



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32. From which of the following can ethane be prepared in one step?

A. Methyl iodine

B. Sodium propanoate

C. Ethyl magnesium bromide

D. All of these

**Answer: D**



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**33.** A compound X produces methane when treated with water. X can be

A. aluminium nitride

B. calcium carbide

C. aluminium carbide

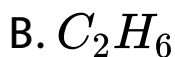
D. calcium phosphide

**Answer: C**



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34. Ethyl magnesium iodide reacts with water to produce a gas with formula

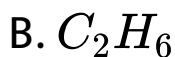


**Answer: B**



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35. Which of the following alkane cannot be prepared from Wurtz reaction



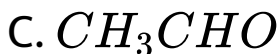
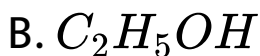
D. All can be produced

**Answer: A**



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36. Which of the following compound can be used for the one step production of methane or ethane?



D. None of these

**Answer: A**



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37. Sodalime decarboxylation of sodium propionate produces

A. propane

B. ethane

C. methane

D. butane

**Answer: D**



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38. Name of  $CH_3CHO$  in IUPAC system is

- A. acetaldehyde
- B. methyl aldehyde
- C. formyl methane
- D. ethanal

**Answer: D**



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39. Which of the following will not produce ethane?

A. Reduction of  $CH_3COOH$  with  $HI / P_4$

B. Reduction of  $CH_3COCH_3$  with  $HI / P_4$

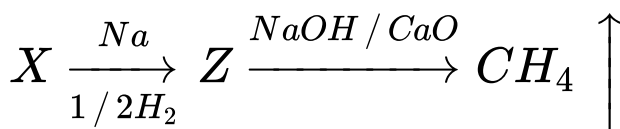
C. Sodalime decarboxylation of sodium proplonate

D. Hydrogenation of ethene in the presence of Ni

**Answer: B**



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



- A. Methane
- B. Ethanoic acid
- C. Propane
- D. None of these

**Answer: B**



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41. Which reaction will not yield alkane?

A. Reduction of acetone with  $Mg/H_2O$

B. Hydrogenation of ethene

C. Treatment of ethanol with methyl  
magnesium bromide

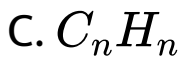
D. Sodalime decarboxylation of sodium  
proplonate

**Answer: A**



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**42.** The general formula of alkyne is



**Answer: B**



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**43.** Formation of alkane by the action of Zn on alkyl halide is called

A. Frankland's reaction

B. Cannizaro's reaction

C. Kolbe's reaction

D. Wurtz reaction

**Answer: A**



44.  $C_2H_5I + \text{alcoholic potash} \rightarrow X$ , Here, X

is

A. acetylene

B. methylene

C. ethylene

D. propylene

**Answer: C**



**45.** In the reaction



A. ethyne

B. ethene

C. ethane

D. None of these

**Answer: B**



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**46.** Methanolic solution of ethylene di chloride on heating with zinc dust produces

A. 2-butane

B. ethanol

C. butane

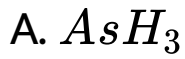
D. ethene

**Answer: D**



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47. Marsh gas is .....



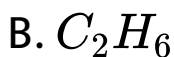
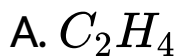
**Answer: C**



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



D. None of these

**Answer: A**



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**49.** The formation of acetylene from ethylene bromide is an example of

- A. elimination reaction
- B. spontaneous reaction
- C. addition reaction
- D. substitution reaction

**Answer: A**



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

A. Ethene

B. Ethane

C. Hexane

D. Butane

**Answer: C**



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51. Which of the following compound is expected to be most reactive?

A. Ethane

B. Ethene

C. Propane

D. Hexane

**Answer: B**



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

A. Alcohol

B. Aldehyde

C. Carboxylic acid

D. Ether

**Answer: D**



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53. Iodination of alkane is carried out in the presence of

A. alcohol

B.  $HNO_3$  or  $HIO_3$

C. any reducing agent

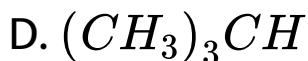
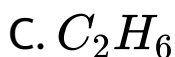
D. benzene

**Answer: B**



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54. Which of the following decolourises solution?



**Answer: D**



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

A. Sodium butyrate

B. Sodium propanoate

C. Mixture of sodium acetate and sodium ethanoate

D. Sodium formate

**Answer: A**



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56. Domestic cooking gas consists of mostly

A. methane and ethane

B. liquefied butane and isobutane

C. ethylene and carbon monoxide

D. acetylene and hydrogen

**Answer: B**



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57. The bond between two carbons in alkane is

A.  $180^\circ$

B.  $120^\circ$

C.  $109^\circ$

D.  $90^\circ$

**Answer: C**



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58. Which of the following compounds is used as a refrigerant?

A. Acetone

B.  $CCl_4$

C.  $CF_4$

D.  $CCl_2F_2$

**Answer: D**



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59. Ethene gas is bubbled through the water saturated with chlorine. The major product formed will be

A. ethanoyl chloride

B. ethylene chlorohydrin

C. ethylene chloride

D. ethylene glycol

**Answer: B**



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60. 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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61. Propyne is treated with aqueous  $H_2SO_4$  in the presence of  $HgSO_4$ . The product formed is

A. propylene hydrogen sulphate

B. 1-propanol

C. acetone

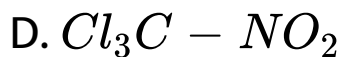
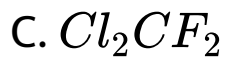
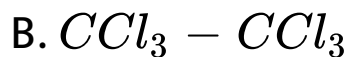
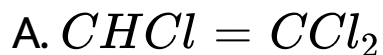
D. propanal

**Answer: C**



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62. Westrosol is



**Answer: A**



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**63.** Sulphur monochloride reacts with ethene to form

A. mustard gas

B. saccharine

C. lewisite

D. None of these

**Answer: A**



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64. Which of the following reagent is helpful in distinguishing between ethene and ethyne?

A.  $Br_2$

B.  $KOH$        $KMnO_4$

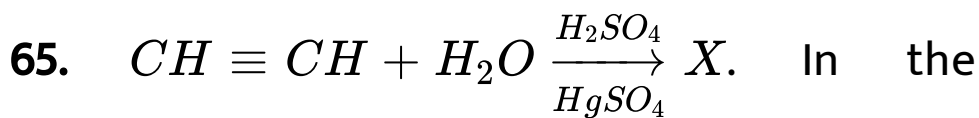
C. Ammoniacal  $AgNO_3$

D. Bromine water

**Answer: C**



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following reaction X is

- A. acetadehyde
- B. propionaldehyde
- C. ketone
- D. ethanol

**Answer: A**



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66.  $C + H_2 \xrightarrow{3300} A \xrightarrow{HCl} B \xrightarrow{HCl} C$  . In the above sequence C is

- A. ethylene chloride
- B. ethylidene chloride
- C. ethyl chloride
- D. carbon tetra chloride

**Answer: B**



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**67.** Which of the following can yield acetylene in one step?

A. Propyne

B. Ethene

C. Ethylene dichloride

D. Sodium acetate

**Answer: C**



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68. Which of the following reagents give Lewisite?

A.  $C_2H_4$  and  $S$

B.  $C_2H_2$  and  $AsCl_3$

C.  $C_2H_2$  and  $HCN$

D. The name is simply associated with one of the theories of acid-base

**Answer: B**



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

A. original mixture

B.  $C_2H_6$

C.  $C_2H_6$  and  $C_2H_4$  mixture

D.  $C_2H_4$  and  $C_2H_2$

**Answer: C**



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70. An alkyne which gives two moles of acetic acid on ozonolysis is -

A. 1-butyne

B. 2-butyne

C. 3-methyl-1-butyne

D. methyl acetylene

**Answer: B**



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71. Acetylene is used in the large scale production of

A. polythene

B. vinyl chloride

C. ethyl alcohol

D. benzene

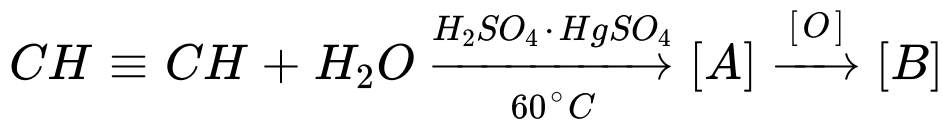
**Answer: B**



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72. In the sequence of reactions



The compound A and B are

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

**Answer: B**





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**73.** Benzene is

A. aliphatic

B. aromatic

C. alicyclic

D. heterocyclic

**Answer: B**



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74. Baeyer's reagent is

A. alkaline  $KMnO_4$

B. acidified  $KMnO_4$

C. neutral  $KMnO_4$

D. aqueous bromine water

**Answer: A**



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75. Which of the following decolourises bromine water as well as Baeyer's reagent?

A. Propane

B. Cyclopropane

C. Propyne

D. Benzene

**Answer: C**



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76. The most reactive hydrocarbon is

A. ethene

B. ethyne

C. ethane

D. methane

**Answer: A**



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77. Alkaline  $KMnO_4$ . Oxidizes acetylene to -

A. acetic acid

B. glyoxal

C. oxalic acid

D. ethylene glycol

**Answer: C**



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**78.** Methane is formed when

A. sodium acetate is heated with soda lime

B. iodomethane is reduced

C.  $Al_4C_3$  reacts with  $H_2O$

D. All of the above

**Answer: D**



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**79.** When acetylene is treated with very dil. HCl in the presence of  $HgCl_2$ , the product obtained is

A. methyl chloride

B. acetaldehyde

C. vinyl chloride

D. formaldehyde

**Answer: B**



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**80.** Acetylene when passed through 20%  $H_2SO_4$  at  $80^\circ C$  gives acetaldehyde. The catalyst required for this conversion is:



A. anhydrous  $AlCl_3$

B.  $HgSO_4$

C. Pb

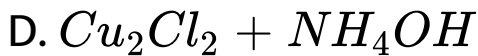
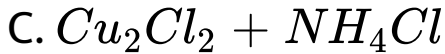
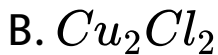
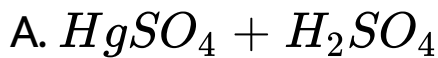
D. Pt

**Answer: B**



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**81.** Catalyst used in dimerisation of acetylene to prepare chloroprene is



**Answer: C**



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**82.** Chloroprene is used in making

A. synthetic rubber

B. plastic

C. petrol

D. All of these

**Answer: A**



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**83.** The product formed when acetylene is passed through red hot tube is

A. benzene

B. cyclohexane

C. neoprene

D. ethane

**Answer: A**



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**84.** Which one of the following reagents distinguish ethylene from acetylene?

A. Aqueous alkaline  $KMnO_4$

B.  $Cl_2$  dissolved in  $CCl_4$

C. Ammoniacal  $Cu_2Cl_2$

D. Conc.  $H_2SO_4$

**Answer: C**



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**85.** Acetylene gives

A. white ppt. with amm.  $AgNO_3$  and red

ppt. with amm.  $Cu(NO_3)_2$

B. white ppt. with amm.  $AgNO_3$  and red

ppt. with amm.  $Cu_2Cl_2$

C. white ppt. with (a) and (b)

D. red ppt. with both

**Answer: B**



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**86.** Acetylene reacts with ammonical silver nitrate to form

A. silver mirror

B. metal silver

C. silver acetate

D. silver acetyllde

**Answer: D**



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

A. ethylene

B. methane

C. ethane

D. acetylene

**Answer: A**



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**88.** Reaction of alkanes with halogen is explosive in case of



A.  $F_2$

B.  $Cl_2$

C.  $Br_2$

D.  $I_2$

**Answer: A**



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**89.** The presence of unsaturation in organic compounds can be tested with :

A. Schiff's reagent

B. Tollen's reagent

C. Fehling's reagent

D. Baeyer's reagent

**Answer: D**



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**90.** Alkaline  $KMnO_4$  converts ethylene into

A. ethane

B. ethanol

C. methanol

D. ethylene glycol

**Answer: D**



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91. Propene  $CH_3CH = CH_2$  can be converted into 1-propanol by oxidation. Indicate which sets of reagents amongst the

following is ideal to effect the above  
converseion?

A.  $KMnO_4$  (alkaline)

B. Osmium tetroxide ( $OsO_4 / CH_2Cl_2$ )

C.  $B_2H_6$  and alk.  $H_2O_2$

D.  $O_3 / Zn$

**Answer: C**



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92. Which gaseous hydrocarbon is produced when calcium carbide reacts with water?

A. Methane

B. Ethene

C. Ethylene

D. Acetylene

**Answer: D**



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93. The IUPAC name of  $CH_3COOH$  is

- A. methanal
- B. ethanoic acid
- C. methanol
- D. methanoic acid

**Answer: B**



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94. Iodoethane reacts with sodium in the presence of dry ether. The main product is

A. pentene

B. propyne

C. butane

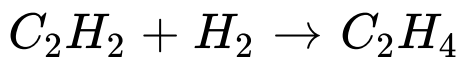
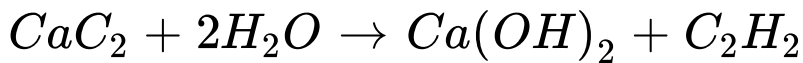
D. butene

**Answer: C**



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95. Formation of polythene from calcium carbide takes place as follows



The amount of polythene obtained from 64 kg of  $CaC_2$  is

A. 7 kg

B. 14 kg

C. 21 kg

D. 28 kg



**Answer: D**



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**96.** Sodalime is

A. NaOH

B.  $NaOH$  and  $CaO$

C. KOH

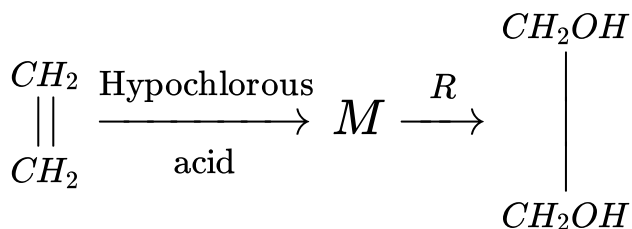
D.  $KOH$  and  $CaO$

**Answer: B**



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97. In the reactions

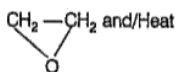


M and R are respectively

A.  $CH_3CH_2Cl$  and  $NaOH$

B.  $CH_3ClCH_2OH$  and eq.  $NaHCO_3$

C.  $CH_3CH_2OH$  and  $HCl$

D. 

**Answer: B**



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**98.** Acetylene reacts with acetic acid in presence of ion at room temperature to give

A. ethyl acetate

B. acetaldehyde

C. vinyl acetate

D. methyl acetate

**Answer: C**



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**99.** In which of the following molecule hydrogen is more acidic ?

A. Acetylene

B. Methane

C. Ethylene oxide

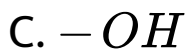
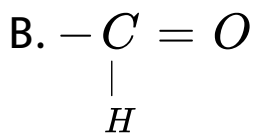
D. Ethane

**Answer: A**



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**100.** The general formula of aldehyde is



**Answer: B**



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