



## CHEMISTRY

### BOOKS - DISHA CHEMISTRY (HINGLISH)

### HYDROCARBONS

Mcq

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

- A. 2,2,4,4-tetramethylhexane
- B. 2,2,4,4-tetramethylpentane

C. 2,2,5,5-tetramethylhexane

D. 2,2,3,3-tetramethylhexane

**Answer: C**



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

A. redox reaction

B.  $\alpha$ -elimination

C.  $\beta$ -elimination

D. Both (a) and (b)

**Answer: C**

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**3.** 1,3-Butadiene when treated with  $Br_2$  gives

- A. 1,4-dibromo-2-butene
- B. 1,3-bibromo-2-butene
- C. 3,4-dibromo-1-butene
- D. 2,3-dibromo-2-butene

**Answer: A**

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4. An alkene having molecular formula  $C_2H_{14}$  was subjected to ozonolysis in the presence of zinc dust. An equimolar amount of the following two compounds was obtained  $CH_3COCH_3$  and  $CH_3COC_2H_5$

The IUPAC name of the alkene is

- A. 3,4-dimethyl-3-pentene
- B. 3,4-dimethyl-2-pentene
- C. 2,3-dimethyl-2-pentene
- D. 2,3-dimethyl-2-pentene

**Answer: D**



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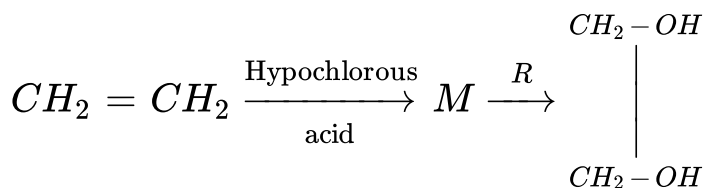
5. Acid catalyzed hydration of alkenes except ethene leads to the formation of

- A. mixture of secondary and tertiary alcohols
- B. mixture of primary and secondary alcohols
- C. secondary or tertiary alcohol
- D. primary alcohol

Answer: C

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6. In a reaction



Where M =molecule, R=reagent, M and R are

A.  $CH_3CH_2Cl$  and  $NaOH$

B.  $CH_2Cl - CH_2OH$  and *aq.*  $NaHCO_3$

C.  $CH_3CH_2OH$  and  $HCl$

D.  $CH_2 = CH_2$  and heat

**Answer: D**



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

A. Thiele's theory

- B. Peroxide effect
- C. Markownikoff's rule
- D. Baeyer's strain theory

**Answer: C**

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### 8. Match the columns

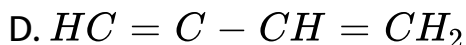
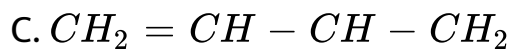
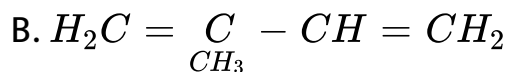
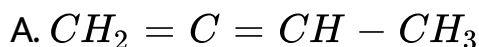


- A. A-III, B-IV, C-I, D-II
- B. A-IV, B-III, C-II, D-I
- C. A-II, B-I, C-IV, D-III
- D. A-III, B-IV, C-II, D-I

Answer: A

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9. Which of the following will yield a mixture of 2-chlorobutene and 3-chlorobutene on treatment with HCl ?



Answer: A

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10. Lindlar's catalyst is

A. Na in alcohol

B. Raney nickel

C.  $Pd / BaSO_4$

D.  $Na / liq. NH_3$

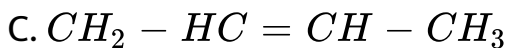
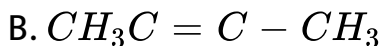
Answer: C



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11. The treatment of  $CH_3MgX$  with  $CH_3C - C - H$  produces

A.  $CH_3 - CH = CH_2$

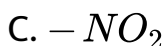
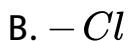
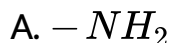


**Answer: D**



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12. A group which deactivates the benzene ring towards electrophilic substitution but which directs the incoming group principally to the o- and p-positions is



D.  $-C_2H_5$

**Answer: B**

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13. Isopropyl alcohol is obtained by reacting which of the following alkenes with conc.  $H_2SO_4$  and  $H_2O$

A. Ethylene

B. Propylene

C. 2-methyl propene

D. Isoprene

**Answer: B**



14. In the preparation of alkanes from hydrogenation of alkenes and alkynes. Finely divided catalysts are used which of the following statement(s) is/are correct regarding these catalysts

(i) Platinum and palladium catalyse the reaction at room temperature.

(ii) Nickel catalyse the reaction at relatively higher temperature and pressure.

(iii) Platinum and palladium catalyse the reaction at higher temperature.

A. I and iii

B. I and ii

C. ii and iii

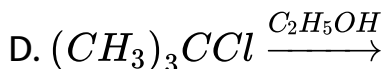
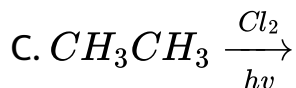
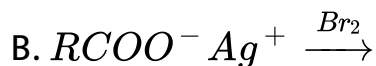
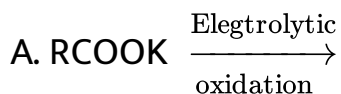
D. I only

**Answer: B**



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15. Which one of the following reactions is expected to readily give a hydrocarbon product in good yields ?



**Answer: A**



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**16.** Which of the following change is correct

A. 

B. 

C. Both (a) and (b) one correct

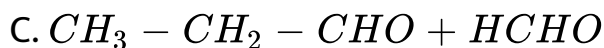
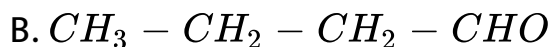
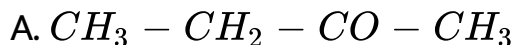
D. Neither (a) nor (b)

**Answer: C**



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17. The products obtained via oxymercuration ( $HgSO_4 + H_2SO_4$ ) of butyne would be



**Answer: A**



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18. The number of optically active products obtained from the complete ozonolysis of the given compound is :



A. 0

B. 1

C. 2

D. 4

**Answer: A**



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**19.** Propyne on polymerisation gives

A. Mesitylene

B. Benzene

C. Ethyl benzene



## D. Propyl benzene

**Answer:**

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20. The electrophilic substitutions reactions of benzene takes place via

- (i) generation of electrophile
- (ii) generation of nucleophile
- (iii) formation of carbocation intermediate
- (iv) removal of proton from the carbocation intermediate

A. I, iii and iv

B. ii, iii and iv

C. I and iv

D. ii and iv

**Answer: A**



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**21.** Two organic compounds A and B both containing only carbon and hydrogen, on quantitative analysis gave the same percentage composition by weight :

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

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

A.  $C_2H_2$  and  $C_6H_6$

B.  $C_6H_6$  and  $C_2H_2$

C.  $C_2H_4$  and  $C_2H_6$

D.  $C_2H_2$  and  $C_2H_6$

**Answer: A**



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22. The major product of the following reaction



A. 

B. 

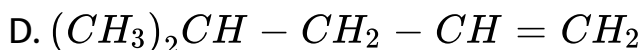
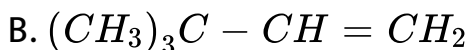
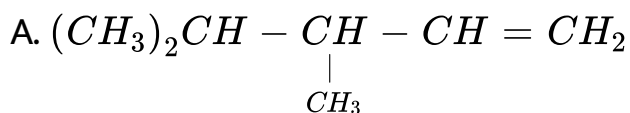
C. 

D. 

Answer: D

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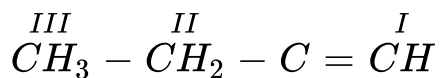
23. 2,3-Dimethyl-2-butene can be prepared by heating which of the following compounds with a strong acid ?



Answer: B

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24. Which C-atom is the most electronegative in this structure ?



- A. I
- B. II
- C. III
- D. all are equal electronegative

**Answer: A**



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25. Which of the following will have least hindered rotation around carbon- carbon bond ?

A. Ethane

B. Ethylene

C. Acetylene

D. Hexachloroethane

**Answer: A**



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26. Of the three isomeric  $C_3H_4$  hydrocarbons shown below how many can exist with all carbon and hydrogen nuclei

located in a single plane



A. 0

B. 1

C. 2

D. 3

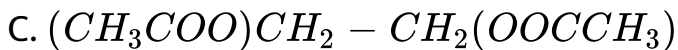
**Answer: A**



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27. Excess of  $CH_3COOH$  is reacted with  $CH \equiv CH$  in presence of  $Hg^{2+}$ , the product is

A.  $CH_3CH(OCOCH_3)_2$



D. None of these

**Answer: A**



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**28.** Which one of the following contain isopropyl group ?

A. 2,2,3,3-tetramethyl pentane

B. 2,4-dimethyl hexane

C. 2,2,3-trimethylpentane

D. 3,3- dimethylpentane



**Answer: B**



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**29. 1-Pentyne**



X and Y can be distinguished by

A. Silver-mirror test

B. Iodoform test

C. Both

D. None

**Answer: C**



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30. The major product obtained in the photo catalysed bromination of 2-methylbutane is :

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

**Answer: D**



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31. Acetylenic hydrogens are acidic because

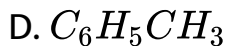
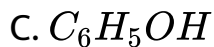
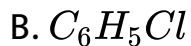
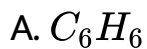
- A. Sigma electron density of C-H bond in acetylene is nearer to carbon, which has 50% s-character
- B. Acetylene has only open hydrogen in each carbon
- C. Acetylene contains least number of hydrogens among the possible hydrocarbons having two carbons
- D. Acetylene belongs to the class of alkynes with molecular formula,  $C_nH_{2n-2}$

**Answer: A**



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**32.** Which of the following will be most easily attacked by an electrophilic ?



**Answer: C**



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**33.** Name of the following reaction is



A. Claisen Condensation

B. Diel's Alder reaction

C. Dieckmann cyclisation

## D. Michael addition reaction

**Answer: B**

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**34.** The most suitable catalyst for the hydrogenation of 2-

Hexyne  $\rightarrow$  2-cis-Hexene is

A.  $Pd - BaSO_4$

B.  $(Ph_3P)_3RhCl$

C. 10% Pd-C

D. Raney Ni

**Answer: A**



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35. 

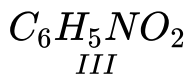
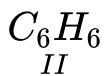
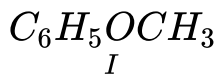
- A. 1 mole of Ethane
- B. 3 mole of ethane
- C.  $EtC \equiv CCH_2CH_2NHEt$
- D. 4 mole of ethane

**Answer: B**



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36. Among the following compounds (I-III), the correct order of reactivity with an electrophile is



A.  $II > III > I$

B.  $III < I < II$

C.  $I > II > III$

D.  $I = II > III$

**Answer: C**



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37. What is the major product expected from the following reaction ?



Where D is an isotope of hydrogen

A. 

B. 

C. 

D. 

**Answer: B**



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**38.** The product of the reaction given below is :



A. 

B. 

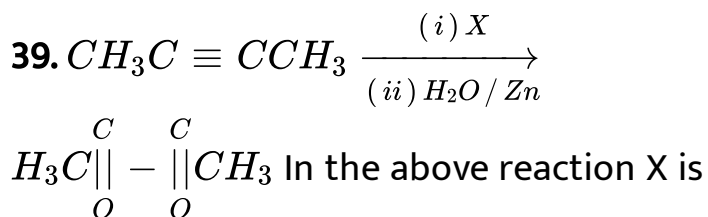
C. 



D. 

Answer: D

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A.  $HNO_3$

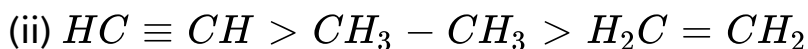
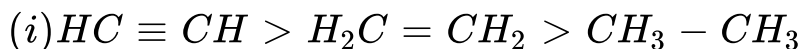
B.  $O_2$

C.  $O_3$

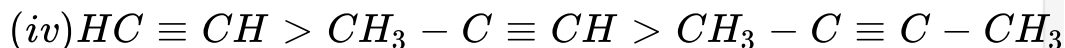
D.  $KMnO_4$

Answer: C

40. Which of the following represent the correct order of acidic strength ?



(iii)



A. I and iii

B. ii and iv

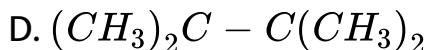
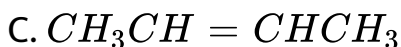
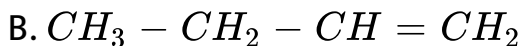
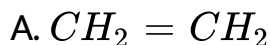
C. I and iv

D. I and iv

Answer: C

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41. Which one of the following compounds would have the highest heat of hydrogenation ?



Answer: A

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42. On mixing a certain alkane with chlorine and irradiating it with ultraviolet light, it forms only one monochloroalkane. This alkane could be

A. pentane

B. isopentane

C. neopentane

D. propane

**Answer: C**



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43. Acetylene gives

- A. white ppt with  $AgNO_3$  and red ppt with  $Cu_2Cl_2$
- B. white ppt with  $Cu_2Cl_2$  and red ppt with  $AgNO_3$
- C. white ppt with both
- D. red ppt with both

**Answer: A**

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**44.** Sodium ethoxide is a specific reagent for

- A. dehydration
- B. dehydrogenation
- C. dehydrohalogenation

D. dehalogenation

**Answer: C**



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