CHEMISTRY

BOOKS - S DINESH & CO CHEMISTRY (HINGLISH)

NO IDEA

Mcq

1. Grignard reagents are prepared in

A. Benzene

B. Chloroform

C. Alcohols

D. Ethers

Answer: D

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2. Hybrid state of central oxygen atom in ether is

A. sp^2

B. sp^3

C. sp

D. sp^3d

Answer: B

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3. Oxygen atom in ether is

A. very active

B. replaceable

C. active

D. comparatively inert

Answer: D

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4. Which is a simple ehter ?

A. $C_2H_5OCH_3$

B. CH_3OCH_3

C. $C_6H_5OCH_3$

D. None of these

Answer: B

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5. Ethers are isomeric with

A. Aldehydes

B. Ketone

C. Both aldehydes and ketones

D. Alcohols

Answer: D

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6. The molecular formula of ethers is

A. C_nH_2nO

B. $C_nH_{2n+2}O$

C. $C_nH_{2n+1}O$

D. $C_nH_{2n}OC_nH_{2n}$.

Answer: B

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7. The common name of the ether, $CH_2 = CH - CH - 2OCH_3$ is

A. Allyl methyl ether

B. 1-Methoxy-2-propane

C. 3-Methoxy-1-propane

D. Vinyl dimethyl ether.

Answer: A

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8. The IUPAC name of n-butyl methyl ether is

A. 2-Methoxy -2-methylpropane

B. 1-Methoxybutane

C. 2-Methoxybutane

D. 1-Methoxy-2-methylpropane.

Answer: C

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9. The IUPAC name of a compound is 2-(-proxpoxy) propane.Its common name is

A. Diethyl ether

B. n-Propyl isopropyl ether

C. Diisopropyl ether

D. Di-n-propylethene.

Answer: C

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10. The oxygen containing angle is maximum in

A. H_2O

B. $CH_3OC_2H_5$

C. CH_3OCH_3

D. $(CH_3)_3COCH(CH_3)_3$

Answer: D

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11. Ether are not distilled to dryness for fear of explosion. This is due to formation of :

A. oxides

B. alcohol

C. ketones

D. peroxides

Answer: D

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12. When ethyl iodide is heated with dry silver oxide, the product formed is :

A. Ethyl alcohol

B. Diethyl ether

C. Silver ethoxide

D. Ethylmethyl ether

Answer: B

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13. tert-Butyl chloride on treatment with sodium alkoxide yields

A. an ether

B. an alkene

C. an alcohol

D. an alkyne

Answer: B

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14. In Willamson's synthesis

A. an alkyl halide is treated with sodium alkoxide

B. an alkyl halide is treated with sodium

C. an alcohol is heated with conc. H_2SO_4 at $130^\circ C$

D. None of the above

Answer: A

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15. A Williamson's synthesis of ethers in an example of

A. nucleophilic substitution reaction

B. nucleophilic addition

C. electrophilic addition

D. none of above

Answer: A

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16. Which of the reaction can be employed for the preparation of unsymmetrical ether. ?

A. dehydration of alcohols

B. Williamson's synthesis

C. dehydration of carboxylic acid

D. dehydrogenation of alcohol

Answer: B

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17. The reaction,

$RX - R' - ONa \rightarrow R' - O - R + NaX$ is called

A. Wurtz reaction

B. Williamson's synthesis

C. Kolbe's reaction

D. Hofmann bromamide reaction.

Answer: B

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18. Ethyl iodide reacts with sodium methoxide to form ethyl ether. It is example of

A. S_N1 reaction

B. S_N2 reaction

C. Substitution reaction

D. Elimination reaction.

Answer: B

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19. The almost exclusive product obtained when tert-butyl bromide is heated with sodium ethoxdie is

A. Isobutylene

B. Ethene

C. tert-Butyl methyl ether

D. Isobutane.

Answer: A

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20. Dehydration of alchols to ethers is catalysed by:

A. Conc. H_2SO_4 at $413K$

B. Conc. H_2SO_4at $443K$

C. Hot HBr

D. Hot HNO_3

Answer: A

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21. When vapours of ethyl alcohol are passed over alumina at 523K, if forms

A. 1,2-Ethanediol

B. Ethene

C. Ethoxyethane

D. Ethanal.

Answer: C

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22. Addition of methanol to 2 - methylpropene in the presence of conc. H_2SO_4 gives

A. tert-Butyl alcohol

B. tert-Butyl methyl ether

C. Di-tert-butyl ether

D. Dimethyl ether.

Answer: B

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23. Which of the following reactions does not yield an ether?

A. Sodium methoxide reacts with dimethyl sulphate

B. Sodium ethoxide reacts with iodide

C. Sodium ethoxide reacts with tert-butyl chloride

D. Ethanol reacts with CH_2N_2 in presence of HBF_4

Answer: C

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24. Phenol on treatment with diethyl sulphate in presence of $NaOH$ gives

A. Phenetole

B. Anisole

C. Diphenyl ether

D. Sodium benzene sulphonate.

Answer: A

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25. To prepare tert-butyl ethyl ether by Williamson's synthesis, the reactions needed are

A. Sodium ethoxide and sodium tert-butyl chloride

B. Sodium ethoxide and tert-butyl bromide

C. Sodium tert-butoxide and ethyl bromide

D. Ethyl alcohol and tert-butyl alcohol and conc.H_2SO_4

Answer: C

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26. When potassium tert-butoxide and methyl bromide are heated, the product formed is

A. Dimethyl ether

B. tert-butyl methyl ether

C. Di-tert-butyl ether

D. Isobutylene.

Answer: B

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27. On heating sodium phenoxide with methyl iodide,we get

A. Diethyl ether

B. Phenetole

C. Anisole

D. Diphenyl ether

Answer: C

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28. An example of a compound wht the functional group $-O-$ is

A. acetic acid

B. Methyl alcohol

C. Diethyl ether

D. Acetone.

Answer: C

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29. Excess of vapours of ethyl alcohol when passed over heated Al_2O_3 at

A. Ehylene

B. Ethane

C. Butane

D. Diethyl ether.

Answer: D

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30. Grignard reagents are prepared in

A. Benzene

B. Chloroform

C. Alcohols

D. Ethers

Answer: D

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31. The reagent use for the preparation of higher ethers from halogenated ethers is

A. Conc.H_2SO_4

B. Sodium alkoxide

C. Dry silver oxide

D. Gringnard reagent.

Answer: D

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32. Product C in the reaction,

$C_2H_5Br \xrightarrow[(\text{aqueous})]{NaOH} A \xrightarrow{Na} B \xrightarrow{CH_3I} C$ will be

A. Propane

B. Ethyl iodide

C. Ethane

D. Ethyl methyl ether

Answer: D

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33. Ethanol and dimethyl ether form a pair of of functional isomers. The boiling point of ethanol is higher than that of dimethyl ether due to the presence of

A. H-bonding in ethyl alcohol

B. H- bonding in dimethyl ether

C. CH_3 group in ethyl alcohol

D. CH_3 group in dimethyl ether.

Answer: A

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34. Epichloropropane is

A. 3-Chloropropane

B. 3-Chloropropane -1

C. 2-Chloromethyloxirane

D. None of these.

Answer: C

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35. An organic compound $[A]$ reacts with sodium metal to from $[B]$. On heating with conc. H_2SO_4, $[A]$ gives diethyl ether. Compound $[A]$ and $[B]$ are respectively.

A. C_2H_5OH and C_2H_5ONa

B. C_3H_7OH and C_3H_7ONa

C. CH_3OH and CH_3ONa

D. C_4H_9OH and C_4H_9ONa.

Answer: A

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36. When ethyl hydrogen sulphate is heated with excess of ethyl at $413K$, the product is :

A. Ethane

B. Ethylene

C. Diethyl ether

D. Diethyl sulphate.

Answer: C

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37. Which of the following does not react with ethers to form coordination complexes ?

A. BF_3

B. RM_gX

C. $AICI_3$

D. $CH_3Ona.$

Answer: D

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38. Accodring to Lewis concept of acids and bases, ether is

A. Acidic

B. Amphoteric

C. Neutural

D. Basic

Answer: D

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39. Which of the following is the strongest Lewis base ?

A. H_2O

B. CH_3CH_2OH

C. $CH_3 - O - CH_3$

D. $CH_3 - \overset{-}{O}\overset{+}{N}a$

Answer: D

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40. Ice cold hydrochloric acid is added to dimethyl ether. The product formed is

A. Dimethyl methane

B. Diemethyl oxonium chloride

C. Methyl chloride

D. Methanol and Methyl chloride

Answer: B

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41. THF is treated with excess of HBr at $373K$. The product is

A. 1, 4-Dibromobutane

B. 1-Bromo-2-butene

C. 4-Bromo-1-butanol

D. 4-Bromo-1-butane.

Answer: A

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42. When diethyl ether is heated with conc. Sulphur acid it forms

A. Propanic acid

B. Acetic acid

C. Ethyl alcohol only

D. Ethyl hydrogen sulphate and ethanol.

Answer: D

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43. Ethers in contact with air for a long time form peroxides. The presence of peroxide in ether can be tested b y adding Fe^{2+} ions followed by the addition of

A. $KCNS$

B. $SnCI_2$

C. $HgCI_2$

D. $KI.$

Answer: A

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44. Ethers are not distilled to dryness for fear of explosion. This is due to formation of

A. oxides

B. peroxides

C. Alcohols

D. ketones

Answer: B

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45. During reaction of anisole with conc. HI at $375K$, which bond of ether cleaves ?

A. $CH_3 - O$

B. $C_6H_5 - O$

C. $C - C$

D. Any of the above

Answer: A

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46. When phenolic ehter is heated with HI, it yields

A. alkyl halide +phenol

B. alcohol + aryl halide

C. alkyl halide + aryl halide + water

D. none of the above.

Answer: A

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47. An unknown compound dissolves in conc. Sulphuric acid and does not reat with sodium. Which of the following classes of molecules would be have in the manner?

A. Alkane

B. Ether

C. Alcohol

D. Phenol.

Answer: B

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48. When diethyl ether is heated with dil. H_2SO_4 under pressure, it gives

A. Propanic acid

B. Acetic acid

C. Methyl carbinol

D. Ethyl hydrogen sulphate

Answer: C

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49. An ether is not cleaved by HI even at $525K$. The compound is

A. $C_6H_5OCH_3$

B. $C_6H_5OC_6H_5$

C. $C_6H_5OC_3H_7$

D. THF.

Answer: B

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50. When diethyl ether is treated with excess chlorine, in the presence of light. The product formed is

A. C_2H_5CI

B. C_2H_6

C. CH_3COCI

D. $(C_2CI_5)_2O$

Answer: D

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51. When anisole is treated with Br_2 in CS_2 the product formed is

A. Methyl bromide and Pheol

B. Bromobenzene

C. Mixture of ortho- and para-Bromoanisole

D. Methanol and Methyl chloride

Answer: C

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52. Ethers in general can be used as

A. Anaesthetics

B. Refrigerants

C. In perfumes

D. In all the above

Answer: D

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53. Which of the following reactions does not gields

A. Methyl acetate

B. Acetonitrile

C. Acetamide

D. Diethyl ether

Answer: D

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54. Which of the following reactions does not yield an alkyl halide

A. Diethyl ether +CI_2

B. Diethyl ether + HI

C. Diethyl ether + PCI_5

D. Diethyl ehter +RCOCI

Answer: A

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55. Diethyl ether can be decomposed by

A. HI

B. NaOH

C. Water

D. $KMnO_4$

Answer: A

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56. A simple mehtod to remove peroxide form ehters is to treat them with an aqueous solution

A. KI

B. KCNS

C. $Na_2S_2O_3$

D. Br_2

Answer: A

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57. Which of the following compounds is used as an anesthesia ?

A. Ethyl alcohol

B. Acetic acid

C. Diethyl ether

D. Acetic anhydride

Answer: C

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58. Anisole with conc. H_2SO_4 gives.

A. Phenol

B. o-Phenol sulphonic acid

C. o-and p-sulphoanisaoles

D. m-sulphoanisole

Answer: C

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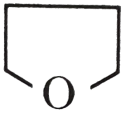
59. Which of the following compounds is not cleaved by HI even at 525 K ?

A. $C_6H_5OCH_3$

B. $(Ph)_2O$

C. $C_6H_5OC_3H_7$

D. (D) 

Answer: B

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60. Which of the following does not react with ethers to form coordination complexes ?

A. BF_2

B. $RMgX$

C. $AICI_3$

D. C_2H_5ONa

Answer: D

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61. Reaction between sodium ethoxide and bromoethane yields

A. Ethane

B. Ethyl alcohol

C. Ethoxy ethane

D. Methoxy ethane

Answer: C

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62. ter-Butyl methyl ehter on heating with HI (g) in the presence of ehter gives a mixture of

A. ter-Butyl alcohol and methyl iodide

B. ter-Butyl iodide and methyl alcohol

C. Isobutylene and methyl iodide

D. Isobutylene and methyl alcohol

Answer: A

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63. When diethyl ether is treated with CI_2 in the presence of dark. Then the product formed is

A. $CH_3\mathbb{C}I_2 - O - CH_2CH_3$

B. $CH_3CHCI - O - CHCICH_3$

C. $\mathbb{C}I_3\mathbb{C}I_2O\mathbb{C}I_2\mathbb{C}I_3$

D. $CH_2\mathbb{C}I_2 - O - CHCICH_3$

Answer: B

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64. The reaction ,$ROH + H_2CN_2$ in the presence of HBF_4 gives the following roduct :

A. $ROCH_3$

B. RCH_2OH

C. $ROHCN_2N_2$

D. RCH_2CH_3

Answer: A

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65. In ether the active group is

A. oxygen

B. C_2H_5

C. hydroxyl

D. none

Answer: D

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66. the raction of hlaogen aicds on an ether, has the following order of ractivity:

A. HCI gt HBr gt HI

B. HI gt HCI gt BHr

C. HI gt HBr gt HCI

D. HCI gt HI gt HBr

Answer: C

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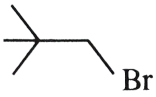
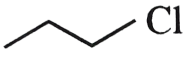
67. Which of the following alkyl halides is most reactive in the Williamson reaction ?

A. (A) 

B. (B) 

C. (C) 

D. (D) 

Answer: B

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68. Which of the following reagents can be used for separating a mixture of ehter and alkyl halide ?

A. Dil. H_2SO_4

B. Conc.H_2SO_4

C. Alk. $KMnO_4$

D. Acidic $K_2Cr_2O_7$

Answer: B

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69. Which of the following compounds is not a Lewis base ?

A. Diethyl ether +CI_2

B. t-butyl alcohol

C. propaone

D. : CCI_2

Answer: D

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70. Diethyl ether combines with CO under specific conditions to form :

A. acetic acid

B. carbon dioxide

C. ethyl propanoate

D. acetyl chloride

Answer: C

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71. Diethyl ether by regareded as anhydride of :

A. C_2H_5COOH

B. C_2H_5OH

C. C_2H_5CHO

D. $C_2H_5COOC_2H_5$

Answer: B

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72. Diethyl ether is decomposed on heating with :

A. NaoH

B. Water

C. $KMnO_4$

D. HBr

Answer: D

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73. When an ether is treated with P_2S_5 we get :

A. thio-alcohol

B. thio ester

C. thio-ether

D. thio- aldehyde

Answer: C

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74. Diethyl ether may behave as :

A. Lewis acid

B. Lewis base

C. oxidising agent

D. reducing agent.

Answer: B

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75. By the action of CH_3I on sodium ethoxide we get :

A. CH_3COOCH_3

B. $CH_3OC_2H_5$

C. $CH_3OC_2H_5$

D. ethyl acetate.

Answer: B

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76. Dialkyl sulohide are known as :

A. sulphonal mercaptan

B. mercaptan

C. thiethers

D. thioesters

Answer: C

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77. Reaction of oxirane with RMgX leads to formation of

A. RCHOHR

B. $RCHOHCR_3$

C. RCH_2CH_2OH

D. (D) 

Answer: C

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78. The reaction, $(CH_3)CBr + C_2H_5 - ONa \rightarrow$ yields :

A. $CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}} - OCH_2CH_3$

B. $CH_3 - \underset{\underset{CH_3}{|}}{C} = CH_2$

C. $CH_3 - \overset{\overset{CH_2CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}} - OCH_3$

D. All the above

Answer: B

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79. Diethyl ether is prepared by passing vapours of ethyl alcohol over heated under high temperature and pressure. The catalysy is :

A. SiO_2

B. CuO

C. Al_2O_3

D. Ag_2O

Answer: C

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80. The number of methoxy and ethoxy groups in a compound is determined and estimated by :

A. Zeisel method

B. Herzig mehtod

C. Hofmann method

D. Kolbe's mehtod.

Answer: B

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81. Which of the following compounds decolourises aqueous bromine and does not give white fumes of HCI on reaction with PCI_5 ?

A. $CH_3CH_2CH_2CH_2OH$

B. $CH_3OCH_2CH = CH_2$

C. $CH_3OCH_2CH_2CH_2OHS$

D. $CH_3CH = CHCH_2CH_2OH.$

Answer: B

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82. Phenol on treatment with diethyl sulphate in presence of $NaOH$ gives

A. Phenetole

B. Anisole

C. Diphenyl ether

D. Diethyl ether.

Answer:

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83. Which of the following cannot be made by using Williamson's synthesis ?

A. Methoxybenxene

B. tert-butyl methyl ether

C. Allyl methyl ether

D. Diethyl - butyl ether

Answer: D

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Revision Question Form Competitive Exams

1. When ethyl hydrogen sulphate is heated with excess of alcohol at 410 K, the product obtained is

A. Ethane

B. Ethylene

C. Diethyl ether

D. Diethyl sulphate.

Answer: C

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2. Anisole with conc. HNO_3 and conc.H_2SO_4 gives

A. Phenol

B. Nitrobenzene

C. o-and p-Nitroanisole

D. m-Nitroanisole.

Answer: C

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3. The order of decreasing ease of reaction with ammonia is

A. Anhydrides, esters, ethers

B. Anhydrides, ethers, esters

C. Ethers, anhydrides, esters

D. Esters, ethers, anhydrides

Answer: A

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4. When a 1° alkyl halide racts with an alkoxide, the prduct is

A. hydrocarbon

B. ether

C. unsaturated hydrocarbon

D. alcohol

Answer: B

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5. Which one of the following reactions does not yield an alkalyl halide

A. Diethyl ether $+CI_2$ (in the dark)

B. Diethyl ether $+HI$

C. Diethyl ether $+PCI_5$

D. Diethyl ether $\xrightarrow{\text{Reduction}} X \xrightarrow{SOCI_2}$

Answer: A

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6. Which of the following cannot be prepared by using Williamson's synthesis ?

A. Methoxybenzene

B. Benzyl -p-nitrophenyl ether

C. Methyl ter-butyl ether.

D. Di- tertiary butyl ether.

Answer: D

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7. On boiling with concentrated HBr phenyl ethyl ether will give.

A. Phenol and ethyl bromide

B. Bormobenzene and ethanol

C. Phenol and ethane

D. Bromobenzene and ethane.

Answer: A

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8. Which of the following compounds is resistant to neuleophillic attack by OH^- ions ?

A. Urea

B. Acetonitrile

C. Acetamide

D. Dithyl ether.

Answer: D

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9. When diethyl ehter is treated with excess of CI_2 in the presence of sunlight, the product formed is :

A. $CH_3CHCI - O - CH_2CH_3$

B. $CH_3CHCI - O - CHCICH_3$

C. $\mathbb{C}I_3\mathbb{C}I_2 - O - \mathbb{C}I_2\mathbb{C}I_3$

D. $CH_3\mathbb{C}I_2 - O - CHCICH_3$

Answer: C

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10. How many isomeric ether are represented by the molecular formula $C_4H_{10}O$

A. 3

B. 2

C. 4

D. 5

Answer: A

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11. In Willamson's synthesis, ethoxyethane is prepared by

A. Passing ethanol over alumina

B. heating ethanol with dry Ag_2O

C. heating sodium ethoxide with ethyl bromide

D. treating ethyl alcohol with excess of H_2SO_4

Answer: C

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12. Increasing order of reactivity of the following alkyl halide in the Willamson's synthesis is

$\underset{I}{CH_2=CHCH_2CI}$, $\underset{II}{CH_3CH_2CH_2Br}$,$\underset{III}{(CH_3)CCH_2Br}$,

$\underset{IV}{CH_3CH_2CH_2CI}$

A. $II < III < IV < I$

B. $III < II < IV < I$

C. $IV < III < I < II$

D. $III < IV < II < I$

Answer: D

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13. An aromatic ether is not cleaved by HI even at 525K. The compound is

A. $C_6H_5OCH_3$

B. $C_6H_5O - C_6H_4(CH_3)$

C. $C_6H_5OC_3H_7$

D. Tetrahydrofuran.

Answer: B

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14. Ether is obtained from ethyl alcohol

A. in presence of H_2SO_4 at $413K$

B. in presence of H_2SO_4 at $473K$

C. in presence of H_2SO_4 at $483K$

D. in presence of H_2SO_4 at $473K$

Answer: A

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15. Acetic anhydride reacts with diethyl ether in presence of anhydrous $AICI_3$ to form

A. CH_3COOCH_3

B. $CH_3CH_2COOCH_3$

C. $CH_3COOCH_2CH_3$

D. CH_3CH_2OH

Answer: C

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16. The number of ether metamers represented by the formula $C_4H_{10}O$ is

A. 4

B. 3

C. 2

D. 1

Answer: B

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17. Which of the following compounds on boiling with alkaline $KMnO_4$ and subsequent acidification will not give benzoic aicd ?

A. Toluene

B. Acetopehenone

C. Anisole

D. Benzyl alcohol

Answer: C

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18. Which of the following is best method to prepare phenyl t-butyl ether :

A. $(CH_3)_3C - O^- Na^+ + C_6H_5Br$

B. $C_6H_5ONa + (CH_3)_3\mathbb{C}I$

C. $(CH_3)_2C = CH_2 \xrightarrow[C_6H_5OH]{Hg(OCOCH_3)_2} \xrightarrow{NaBH_4}$

D. None of these

Answer: C

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19. An organic compound of moleuular formula C_3H_6O dones not prduce any precipitate with 2,3- dinitrophenyl hydrazine and does not react with sodium metal. This compound is

A. CH_3COCH_3

B. $CH_2 = CH - OCH_3$

C. CH_3CH_2CHO

D. $CH_2 = CHCH_2OH$

Answer: B

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20. Grignard reagent is not prepared in aqueous medium but it is prepared in ether medium, because.

A. the reagent forms complex with water

B. the reagent becomes inactive in water

C. it is insoluble in water

D. the reagent is highly reactive in water.

Answer: D

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21. An organic compound of molecular formula $C_4H_{10}O$ does not react with sodium. With excess of HI, it gives only one type of alkyl halide. The compound is

A. Ethoxyethane

B. 2-Methyloxypropane

C. 1-Methyloxypropane

D. 1-Butanol

Answer: C

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22. The $C-O-C$ angle in ether is about

A. 180°

B. $190^\circ - 28'$

C. 110°

D. 105°

Answer: C

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23. The ether the undergoes electrophilic substitution reaction is

A. $CH_3OC_2H_5$

B. $C_6H_5OCH_3$

C. CH_3OCH_3

D. $C_2H_5OC_2H_5$

Answer: B

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24. Ethers are quite stable towards :

A. Oxidising agents

B. Reducing agents

C. Na Metal

D. Bases.

Answer: A

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25. Ethers which is liquid at room temperature is

A. $C_2H_5OCH_3$

B. CH_3OCH_3

C. $C_2H_5OCH_2H_5$

D. None

Answer: C

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26. In the following reaction

$C_2H_5OC_2H_5 + 4[H] \xrightarrow{RedP+HI} 2X + H_2O$ X is

A. Ethane

B. Ethtylene

C. Butane

D. Porpane.

Answer: A

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27. An ether is more volatile than alcohol having the same molecular formula. This is due to:

A. dipolar character of ethers

B. alcohols having resonance structure

C. inter- molecular hydrogen bonding in ethers

D. inter- molecular hydrogen bonding in alcohols.

Answer: D

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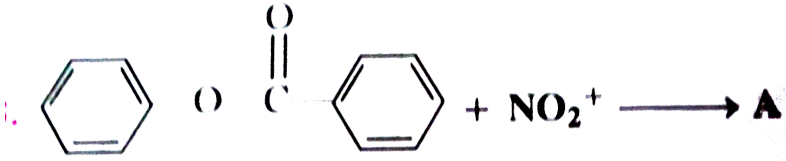
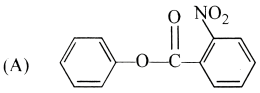
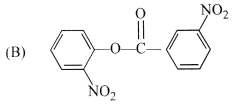
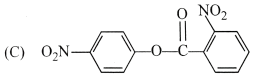
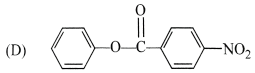
28. 

The product A is

A. 

B. 

C. 

D. 

Answer: C

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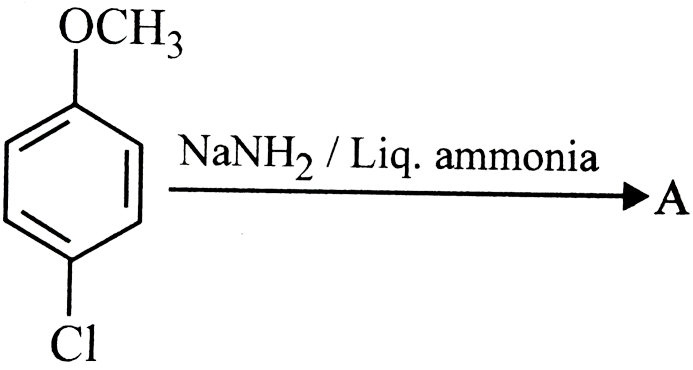
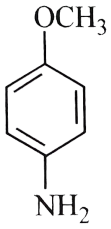
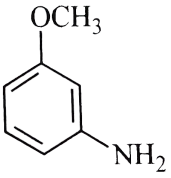
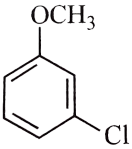
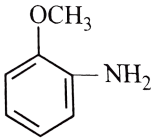
29. In the reaction



A. (A) 

B. (B) 

C. (C) 

D. (D) 

Answer: B

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30. When methyl -t-butyl ether is formed ?

A. $(C_2H_5)_3CONa + CH_3CI$

B. $CH_3ONa + (CH_3)_3\mathbb{C}I$

C. $(CH_3)_3CONa + C_2H_5CI$

D. $(CH_3)_3CONa + CH_3CI.$

Answer: D

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31. Alcohols are isomeric with

A. acids

B. ethers

C. esters

D. aldehydes.

Answer: B

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32. The major product formed in the following reaction is :

$$CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{H}{|}}{C}} - CH_2Br \xrightarrow[CH_3OH]{CH_3O^-}$$

A. $CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{H}{|}}{C}} - CH_2OCH_3$

B. $CH_3 - \underset{\underset{OCH_3}{|}}{C}\ H - CH_2CH_3$

C. $CH_3 - \overset{\overset{CH_3}{|}}{C}\ H = CH_2$

D. $CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{OCH_3}{|}}{C}} - CH_3$

Answer: C

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33. State the product formed during reaction betweeen sodium phenoxide and ethyl iodide on heating

A. Benzyl alcohol

B. Phenol

C. Phenetole

D. none of the above.

Answer: C

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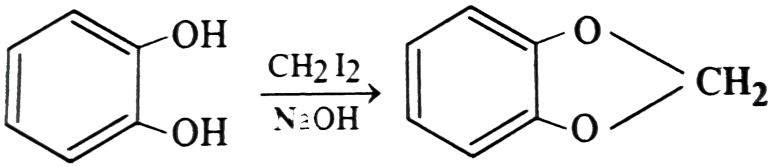
34. The reaction



A. Wurtz reaction

B. Witting reaction

C. Ullmann reaction

D. Williamson reaction.

Answer: D

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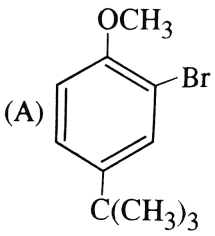
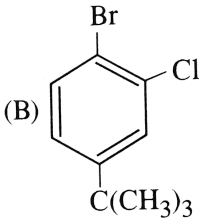
35. Anisole $\xrightarrow{(CH_3)_3CCI} \xrightarrow{CI_2/FeCI_3} \xrightarrow[\text{Heat}]{HBr} X$

The product X in the above series of reaction is

A.



B.



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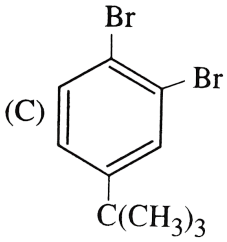
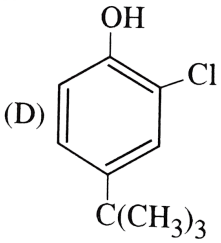


D.



Answer: D

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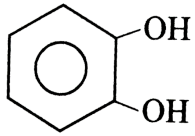
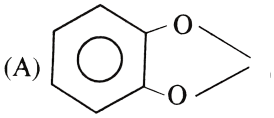
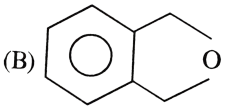
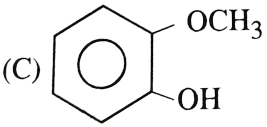
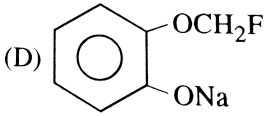
36.  $+ CH_2I_2 + NaOH \longrightarrow$ The product is

A. 

B. 

C. 

D. 

Answer: A

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37. The products obtained when benzyl phenyl ether is heated with HI in the mole rate 1 : 1 are.

(1) Phenol. (2) benzyl alcohol, (3) benzyl,iodide, (4)Iodobenzene

A. 1and 3only

B. 3 and 4 only

C. 1 and 4 only 2and 4 only

D.

Answer: A

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38. Give the correct IUPAC name for

$$CH_3CH_2 - O - \overset{CH_3}{\underset{|}{C}}H - CH_2CH_2CH_2CI$$

A. 2-ethoxy-5-chloropentane

B. 1-chloro-4-ethoxy-4-methyl butane

C. 1-chloro-4-ethoxypentane

D. Ethyl-chloropentyl ether.

Answer: A

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39. Formation of methyl tertiary butyl ether by the reaction of sodium tertiary butoxide and methyl bromide involves

A. elimination reaction

B. electrophilic addition reaction

C. nucleophilic addition reaction

D. nucleophilic substitution reaction.

Answer: D

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40. The IUPAC name of $CH_3 - O - CH_2CH_2CH_3$ is

A. propoxy methane

B. methoxy propane

C. methyl propyl ether

D. propyl methyl ether.

Answer: B

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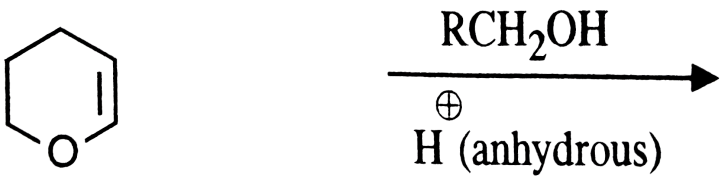
41. The major product of the following reaction is



A. a hemiacetal

B. an acetal

C. an ether

D. as ester.

Answer: C

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42. Among the following ethers, which one will produce methyl alcohol on treatment with hot concentreated HI?

A. $CH_3 - \underset{\underset{CH_3}{|}}{C}H - CH_2 - O - CH_3$

B. $CH_3 - CH_2 - CH_2 - CH_2 - O - CH_3$

C. $CH_3 - CH_2 - \underset{\underset{CH_3}{|}}{C}H - O - CH_3$

D. $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - O - CH_3$

Answer: D

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43. Structure of diethyl ehter is confirmed by :

A. Kolbe's synthesis

B. Franklend's synthesis

C. Willamson's synthesis

D. Wurtz synthesis

Answer: C

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Selected

1. Diethyl ether can be distinguished from n-butanol by :

A. aqueous $FeCI_3$

B. reaction with Na metal

C. Tollen's reagent

D. reaction with chromic anhydride (CrO_3) in dil. H_2SO_4

Answer: B::D

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2. Isobutylene is obtanied when

A. Sod. T-butaxide is treated with methyl iodide

B. t-Butyl bromide is treated with sodium methoxide

C. t-Butyl alcohol is treated with conc. H_2SO_4

D. t-Butyl methyl eter is heated with conc. H_2SO_4.

Answer: B::C::D

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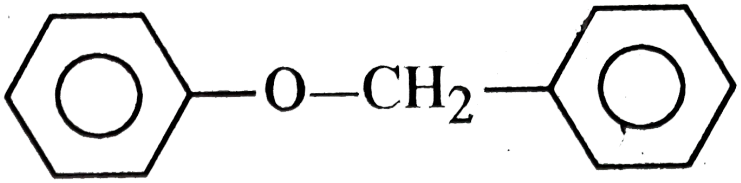
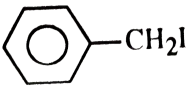
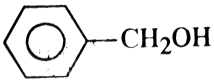
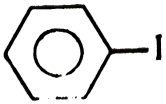


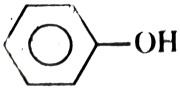
3. The ether

when

A. (A) 

B. (B) 

C. (C) 

D. (D) 

Answer: A::D

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4. THF is treated with excess of HBr at $373K$. The product is

A. 1,4-Dibromobutane

B. 1-Bromo-2-butane

C. 4-Bromo-1-butanol

D. 4-Bromo-1-butane.

Answer: A

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5. DiEthyl ether on heating with conc. HI gives two moles of

A. Ethanol

B. Iodoform

C. Ethyl iodide

D. Methyl iodide.

Answer: C

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6. ter-Butyl methyl ether on heating with HI gives a mixture of

A. ter-Butyl alcohol and methyl iodide

B. ter-Butyl iodide and methanol

C. Isobutylene and methyl iodide

D. Isobutylene and methanol.

Answer: B

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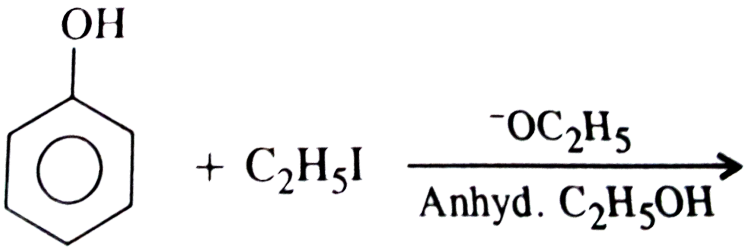
7.



A. $C_6H_5OC_2H_5$

B. $C_2H_5OC_2H_5$

C. $C_6H_5OC_6H_5$

D. C_6H_5I

Answer: B

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8. Which of the following resonating structure of 1-methoxy - 1,3-butadiene is least stable?

A. $\overset{\ominus}{C}H_2 - CH = CH - CH = \overset{\oplus}{O} - CH_3$

B. $\overset{\ominus}{C}H_2 - \overset{\oplus}{C}H = CH - CH = O - CH_3$

C. $CH_2 = CH_2 - \overset{\ominus}{C}H - CH = \overset{\oplus}{O} - CH_3$

D. $CH_2 = CH_2 - \overset{\ominus}{C}H - \overset{\oplus}{C}H - O - CH_3$

Answer: C

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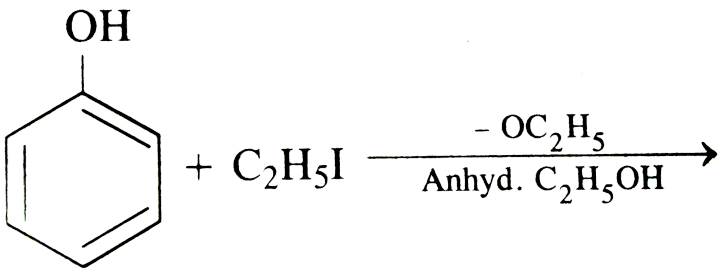
9. 

A. $C_6H_5OC_2H_5$

B. $C_2H_5OC_2H_5$

C. $C_6H_5OC_6H_5$

D. C_6H_5I

Answer: B

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10. Among the following. The one which reacts most readily with ethanol is

A. p-Nitrobenzyl bromide

B. p-Chlorobenzyl chloride

C. p-Methoxybenzyl bromide

D. p-Methyl benzyl bromide.

Answer: A

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11. $CH_3OC_2H_5$ and $(CH_3)_3COCH_3$ are treated with hydroiodic acid. The fragments after reaction obtained are

A. $CH_3I + HOC_2H_5, (CH_3)_3I + HOCH_3$

B. $CH_3OH + C_2H_5I, (CH_3)_3I + HOCH_3$

C. $CH_3OH + C_2H_5I, (CH_3)_3C - OH + CH_3I$

D. $CH_3I + HOC_2H_5, CH_3I + (CH_3)_3C - OH$

Answer: A

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12. In the reaction $CH_3 - \overset{CH_3}{\underset{|}{C}}H - CH_2 - O - CH_2 - CH_3 + HI \xrightarrow{\text{Heat}} \ldots\ldots$ which of the following compounds will be formed.

A. $CH_3 - \overset{CH_3}{\underset{|}{C}}H - CH_2OH + CH_3CH_2I$

B. $CH_3 - \overset{CH_3}{\underset{|}{C}}H - CH_2I + CH_3CH_2OH$

C. $CH_3 - \underset{CH_3}{\overset{|}{C}}H - CH_2 + CH_3CH_2OH$

D. $CH_3 - \underset{CH_3}{\overset{|}{C}}H - CH_2OH + CH_3CH_3$

Answer: A

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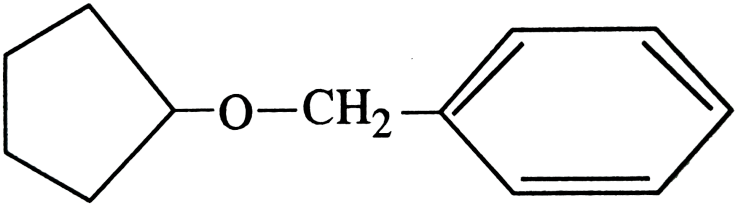
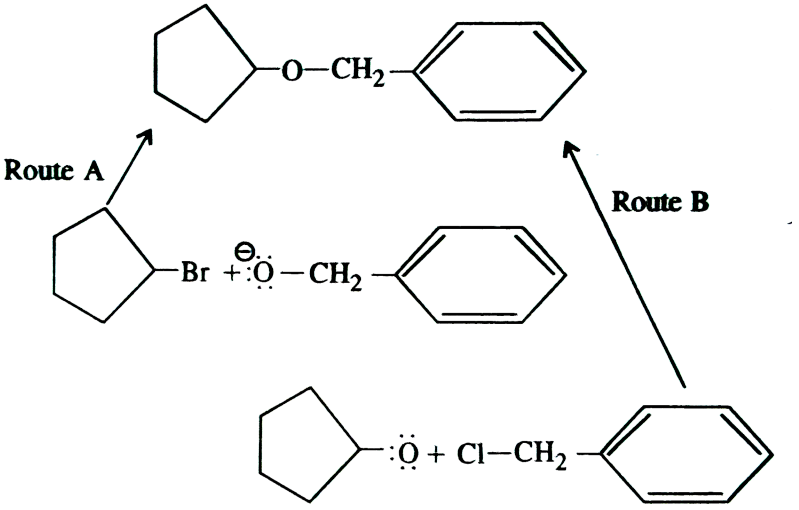
Linked Compression

1. When our target is



asked to make this ether startint from alkyl halides. First we recall that ethers can be prepared by substitution reactions of alkoxide anion nucleophiles with alkyl halide electrophiles- The William ether synthesis. The two ways to prepare the target ether are as follows



Next we examine the two reactions to determine whether both are expected to give a good yield of the target compound. Since route A combines a strongly basic nucleophile a secondary (2°) alkayl halide we

expect the major product to result from elimaination by E_2 mechanism.

Route B on the other hand, employs a primary alkylhalide that can not give elimination (It has no hydrogen on the β-carbon) and that is excellent.

Substrate for an $S_N2$substitution because it is benzylic Route B is the obvious choice.

Which of the following reagents when heated will give a good yield of an ether.

A. Isopropyl bromide and sodium isopropoxide

B. Isopropyl bromide and sodium ethoxide

C. Bromo benzene and sodium phenoxide

D. Sodium tert butoxide and ethyl bromide.

Answer: D

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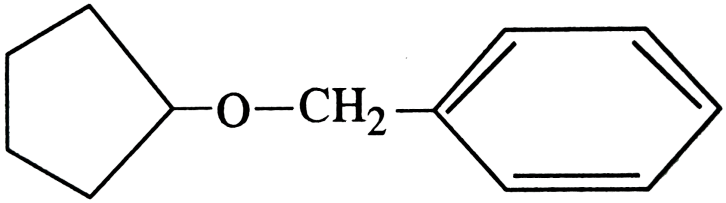
2. When our target is



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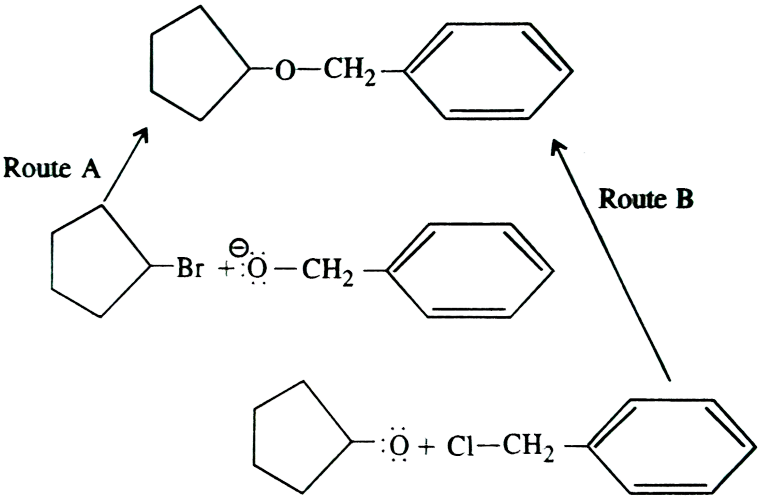

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Substrate for an $S_N2$substitution because it is benzylic Route B is the obvious choice.

Which of the following ethers can be prepared by William's synthesis ?

A. Benzyl methyl ether

B. Methyl vinyl ether

C. Divinyl ether

D. Diphenyl ether

Answer: A

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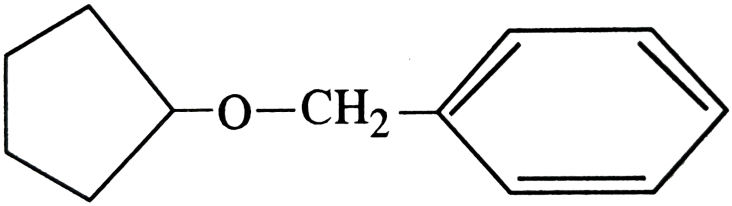
3. When our target is



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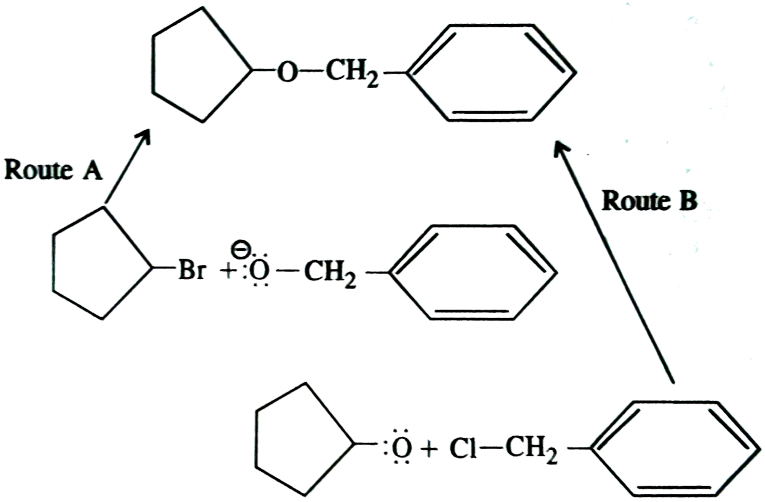

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Route B on the other hand, employs a primary alkylhalide that can not give elimination (It has no hydrogen on the β-carbon) and that is excellent.

Substrate for an $S_N2$substitution because it is benzylic Route B is the obvious choice.

Methyl tertiary butyl ether (MTBE) is an important gasoline additive for improving octane number. Select the best method of its synthesis out of the following.

A. $CH_3CONa + CH_3I \rightarrow$

B. $(CH_3)_2C = CH_2 + CH_3OH \xrightarrow{H_2SO_4}$

C. $(CH_3)_2CBr + CH_3ONa \rightarrow$

D. all give $100\,\%$ yield

Answer: A

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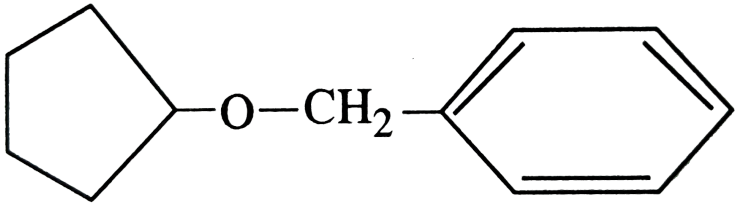
4. When our target is



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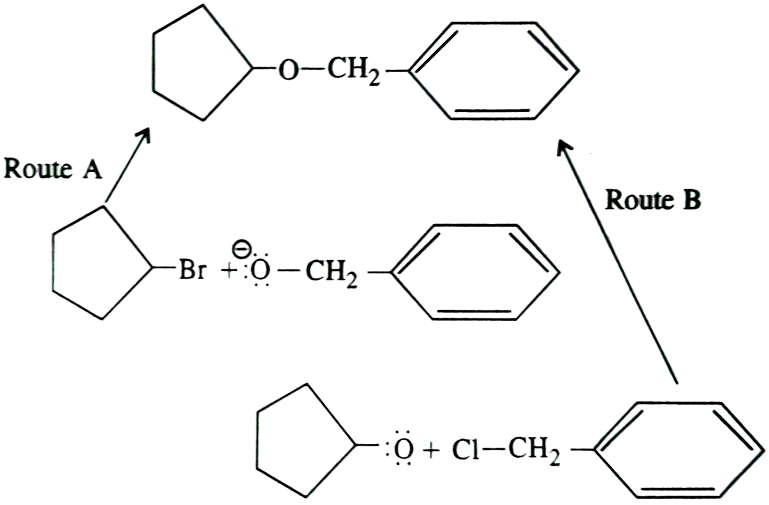


Next we examine the two reactions to determine whether both are expected to give a good yield of the target compound. Since route A

combines a strongly basic nucleophile a secondary (2°) alkayl halide we expect the major product to result from elimaination by E_2 mechanism.

Route B on the other hand, employs a primary alkylhalide that can not give elimination (It has no hydrogen on the β-carbon) and that is excellent.

Substrate for an $S_N2$substitution because it is benzylic Route B is the obvious choice.

Benzyl ether reacts with HI to form

A. p-iodotoluene and ethyl alcohol

B. Benzyl alcohol and ethyl iodide

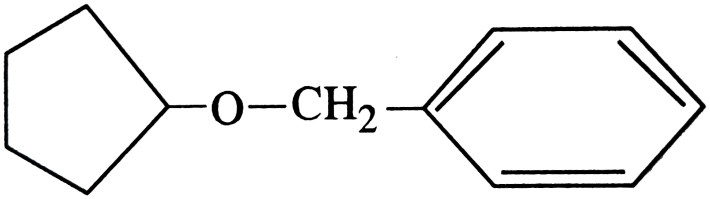
C. Benzyl iodide and ethyl alcohol

D. Iodobenzene and ethyl alcohol.

Answer: C

View Text Solution

5. When our target is



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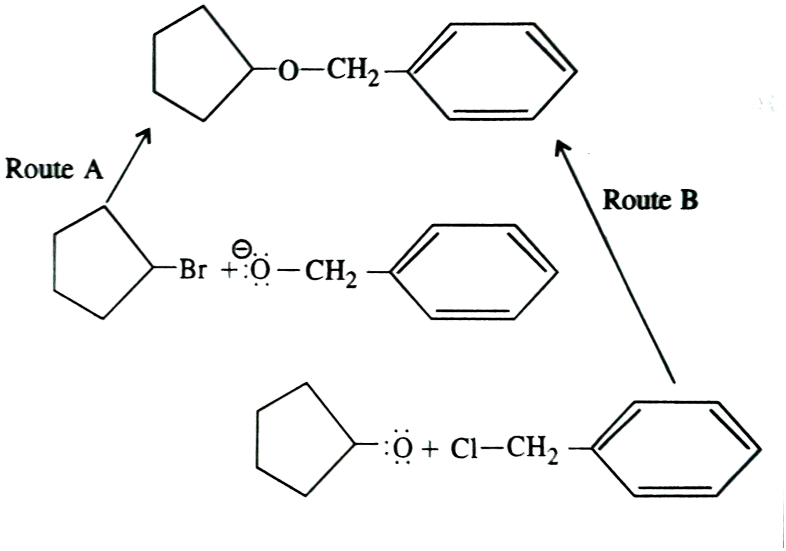

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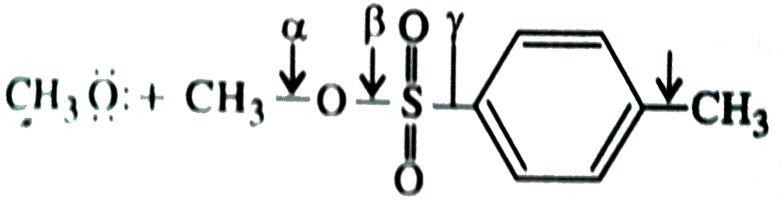
Substrate for an $S_N2$substitution because it is benzylic Route B is the obvious choice.

Ester of toluence -p- sulphonic acid and alkoxide react in the presence of sodium to form ether



A. α-bond since toluene -p-sulphonate is good leaving group

B. β-bond since $CH_3\overset{\Theta}{O}$is better leaving group

C. γ-bond since it has least bond energy.

D. δ-bond since hyper conjugation makes CH_3

Answer: A

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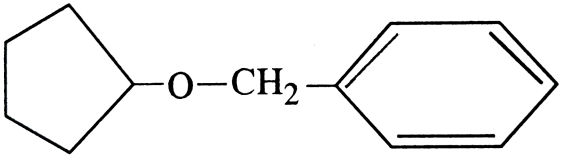
6. When our target is



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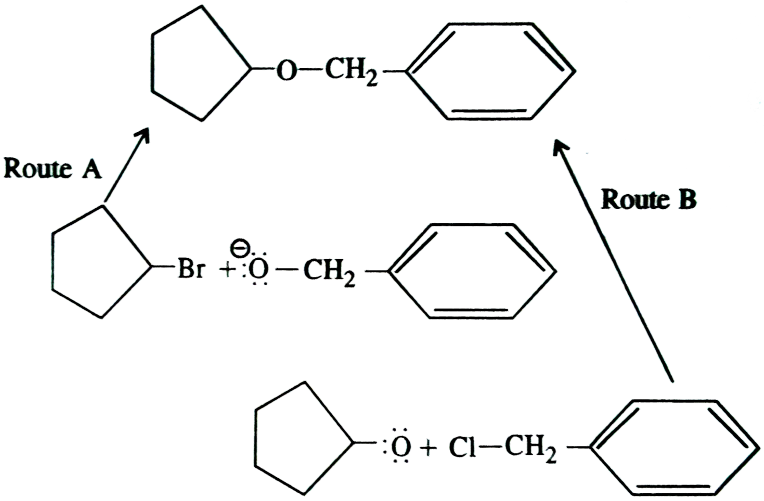

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Route B on the other hand, employs a primary alkylhalide that can not give elimination (It has no hydrogen on the β-carbon) and that is excellent.

Substrate for an $S_N2$substitution because it is benzylic Route B is the obvious choice.

Alkyl phenyl ether can be prepared by heating

A. $C_6H_5Br + CH_2 = CH - CH_2ONa$

B. $CH_2 = CHCH_2Br + C_6H_5ONa$

C.

D. $C_2H_6CH = CHBr + CH_3ONa$

Answer: B

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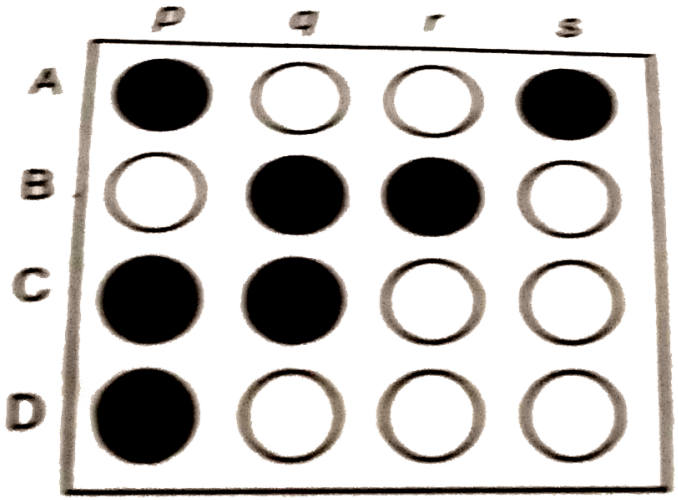
Matrix



1.

	Column I		Column II
(A)	Williamson's synthesis	*p*.	Nucleophilic displacement of halide ions from alkyl halide by alkoxide ion.
(B)	Best yield of unsymmetrical aliphatic ethers with primary halides	*q*.	S_N^2 mechanisms
(C)	Phenolic ether	*r*.	alkyl halide with sodium phenoxide
(D)	Isobutylene	*s*.	sodium ethoxide with tertiary butyl bromide

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Reason Assertion Type Mcq

1. Assertion : Alcohols have higher boiling points than ethers of comparable moleucular masses.

Reason : Alcohols and ethers are isomeric in nature.

A. Both A and B are true and R is the correct explanation of A.

B. A is true but R is False.

C. A is False but R is True.

D. Both A and R are false.

Answer: B

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2. Assertion : Ethers have specific dipole moment values.

Reason : The $C-O$ bond is of polar nature.

A. Both A and B are true and R is the correct explanation of A.

B. A is true but R is False.

C. A is False but R is True.

D. Both A and R are false.

Answer: B

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3. (A) With HI, anisole forms iodobenzene and methyl alcohol.

(R) I^- ion will combine with smaller group to avoid steric hindrance.

A. Both A and B are true and R is the correct explanation of A.

B. A is true but R is False.

C. A is False but R is True.

D. Both A and R are false.

Answer: D

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4. Assertion : Ethers behave as bases in the presence of mineral

Reason : Due to the presence of lone electron pair on the oxygen atom.

A. Both A and B are true and R is the correct explanation of A.

B. A is true but R is False.

C. A is False but R is True.

D. Both A and R are false.

Answer: A

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5. Assertion : $(CH_3)_3COH$ when heated with conc. H_2SO_4 gives isobutylene as the main product and not di-tertiary butyl ether.

Reason : All alcohols are radily dehyrated with conc. H_2SO_4

A. Both A and B are true and R is the correct explanation of A.

B. A is true but R is False.

C. A is False but R is True.

D. Both A and R are false.

Answer: C

View Text Solution

6. Assertion : ter-Butyl methyl ether on cleavage with conc. HI at 373K gives tert-butyl iodide and methanol.

Reason : The reaction occurs by S_N2 mechanism.

A. Both A and B are true and R is the correct explanation of A.

B. A is true but R is False.

C. A is False but R is True.

D. Both A and R are false.

Answer: C

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7. Assertion : The major products formed by heating $C_6H_5CH_2 - OCH_3$ with conc. HI are $C_6H_5CH_2I$ and CH_3OH.

Reason : Benzyl cation is more stable than methyl cation.

A. Both A and B are true and R is the correct explanation of A.

B. A is true but R is False.

C. A is False but R is True.

D. Both A and R are false.

Answer: A

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Ultimate Preparatory Package

1. Grignard reagent, PhMgBr on treatment with ethylene oxide followed by acid hydrolysis gives

A. $C_6H_5CH_2CH_2OH$

B. $PhCHOHCH_3$

C. $C_6H_5CH_2CHO$

D. $PhCOCH_3$

Answer: A

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2. Which of the following is the most basic in character

A. H_2O

B. CH_3CH_2OH

C. CH_3OCH_3

D. C_6H_5OH

Answer: A

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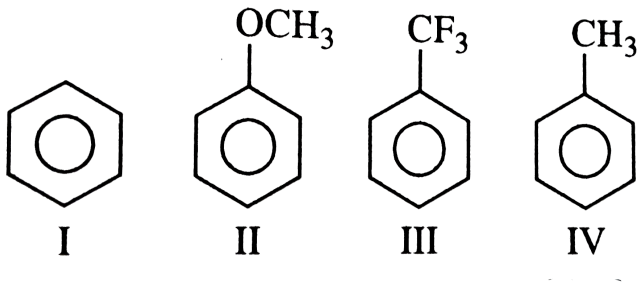
3. The most reactive of the following towards electrophilic substitution reaction is



A. I

B. II

C. III

D. IV

Answer: B

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4. Phentole reacts with HI to give

A. iodobezene and ethanol

B. phenol ethyl iodide

C. ethyl iodide and benzene

D. all of these

Answer: B

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5. Which of the following alkyl halides is least reactive in the Willamson synthesis of ether ?

A. $CH_3CH_2CH_2Br$

B. $CH_3CH_2CH_2CI$

C. $(CH_3)_3\mathbb{C}H_2Br$

D. $CH_2 = CH - CH_2CI$

Answer: C

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6. Indicate the incorrect statement ?

A. diethyl ether is used as anaesthetic

B. diethyl ether is used as refrigerent

C. diethyl ehter is an inert compound

D. diethyl ehter is soluble in water.

Answer: D

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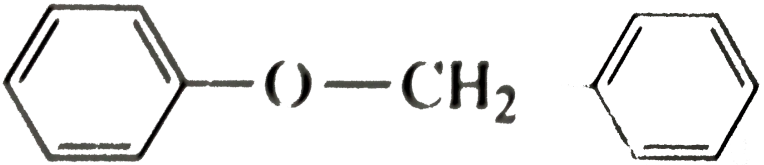
7. The ether 

when treated with HI produces:

A. $C_6H_5CH_2OCH_3$

B. $C_6H_5CH_2OH$

C. C_6H_5I

D. C_6H_5OH

Answer: D

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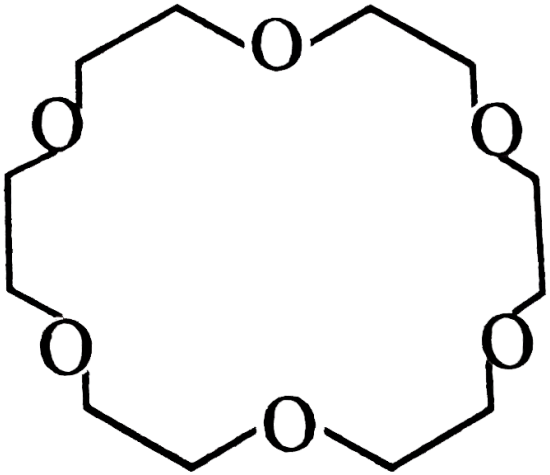
8. Which is correct for 18 crown-6



A. it has formula $C_{12}H_{24}O_6$

B. the number 18 represents the no. of carbon and oxygen atoms in it.

C. the number six represents the no. of oxygen atom

D. all the above

Answer: D

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9. ter-Butyl methyl ehter on heating with anhydrous HI in dry ether gives a mixture of

A. ter-Butyl alcohol and methyl iodide

B. ter-Butyl iodide and methyl alcohol

C. Isobutylene and methyl iodide

D. None of these.

Answer: A

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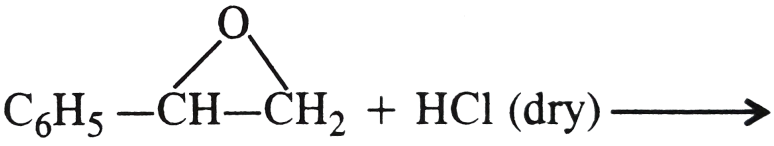
10. The main product of the following reaction is



A. $C_6H_5 - \overset{OH}{\overset{|}{C}}H_2CI$

B. $C_6H_5 - \overset{CI}{\underset{|}{C}}H_2OH$

C. $C_6H_5CH_2OH$ and CH_3OH

D. None of these

Answer: B

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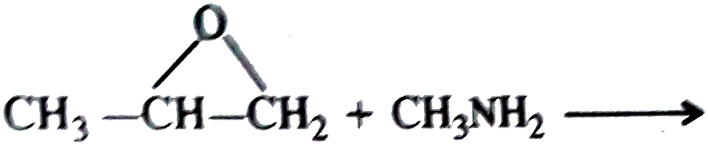
11. The main product of the following reaction is



A. $C_6H_5 - \overset{OH}{\underset{|}{C}}H - \overset{NHCH_3}{\underset{|}{C}}H_2$

B. $C_6H_5 - \overset{NHCH_3}{\underset{|}{C}}H - \overset{OH}{\underset{|}{C}}H_2$

C. $C_6H_5 - \overset{OH}{\underset{|}{C}}H - \overset{NHCH_3}{\underset{|}{C}}H_2$

D. $C_6H_5 - \overset{CH_2NH_2}{\underset{|}{C}}H - \overset{OH}{\underset{|}{C}}H_2$

Answer: A

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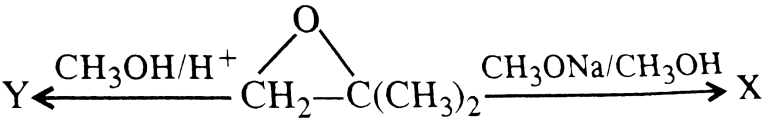
12. Consider the following reactions



A. Both X and Y are soame and are 1-methoxy-2-methylpropan-2-ol

B. Both X and Y are soame and are 2-methoxy-2-methylpropan-1-ol

C. X is 1-methoxy-2-methylpropan-2ol and Y is 2-methoxy-2-methylpropan-1-ol

D. X is 2-methoxy-2-methylpropan-2-methylpropan-1-ol and Y is 1-methoxy-2-methylpropan-2-ol

Answer: C

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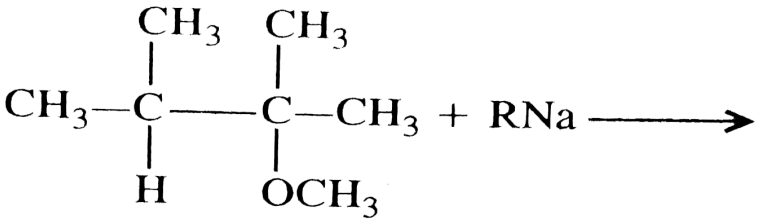
13. The reactions,



A. $CH_3 - \overset{\overset{CH_3}{|}}{C} = \overset{\overset{CH_3}{|}}{C} - CH_3$

B. $CH_3 - \underset{\underset{R}{|}}{\overset{\overset{CH_3}{|}}{C}} = \underset{\underset{ONa}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_3$

C. $CH_3 - CH - CH = CH_2$

D. none of the above.

Answer: A

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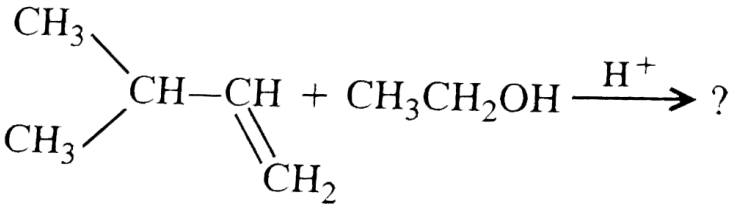
14. The following reaction would give :



A. $CH_3-\underset{\displaystyle CH_3}{\underset{|}{C}}H-\underset{\displaystyle OCH_2CH_3}{\underset{|}{C}}H-CH_3$

B. $CH_3-\underset{\displaystyle OCH_2CH_3}{\overset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}}-CH_2CH_3$

C. $CH_3-\underset{\displaystyle OCH_2CH_3}{\overset{\displaystyle CH_2CH_3}{\overset{|}{\underset{|}{C}}}}-CH_3$

D. All of the above

Answer: B

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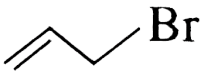
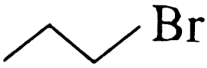
15. Which of the following decreasing order is correct in Williamson synthesis of the compounds ?

(I)



(II)

(III)



(IV)

A. II gt IV gt III gt I

B. I gt II gt III gt IV

C. IV gt III gt II gt I

D. III gt II gt I gt IV

Answer: A

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16. A simple method to remove peroxides from ehters is to treat them with an aqueous solution of

A. $FeSO_4$

B. KCNS

C. $Na_2S_2O_3$

D. Br_2

Answer: A

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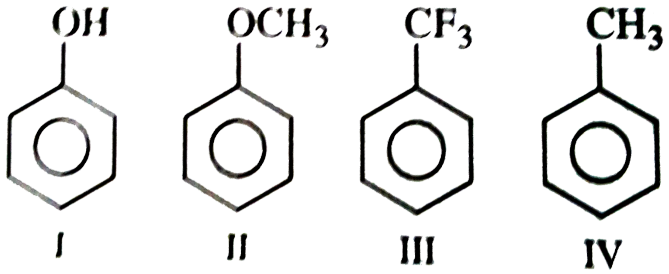
17. The order of reactivity of the following towards electrophillic substitution reaction is



A. I $>$ II $>$ III $>$ IV

B. II $>$ III $>$ I $>$ IV

C. III $>$ I $>$ IV $>$ II

D. I $>$ II $>$ IV $>$ III

Answer: D

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18. Sodium t-butoxide on treatment with ethyl bromide gives :

A. $CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}} - OCH_2CH_3$

B. $CH_3 - \overset{\overset{CH_3}{|}}{C} = CH_2 + CH_2 = CH_2$

C. $CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}} - Br + CH_3CH_2ONa$

D. $CH_3 - \underset{\underset{CH_3}{|}}{C} - CH = CH_2$

Answer: A

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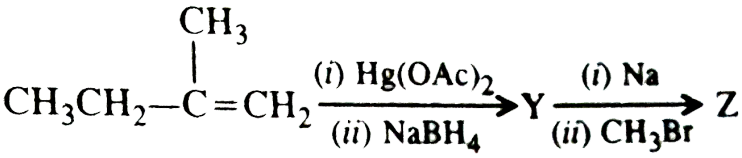
19. The product Z of the following series of reactions is :



A. $CH_3CH_2-\overset{\overset{CH_3}{|}}{\underset{\underset{H}{|}}{C}}-CH_2OCH_3$

B. $CH_3CH_2-\overset{\overset{CH_3}{|}}{\underset{\underset{OCH_3}{|}}{C}}-CH_3$

C. $CH_3CH_2-\overset{CH_3}{\underset{|}{C}}-\overset{OCH_3}{\underset{|}{C}}H_3$

D. $CH_3CH_2-\overset{CH_3}{\underset{|}{C}}-\overset{OCH_3}{\underset{|}{C}}H_3$

Answer: B

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20. 2-Phentlethanol may be prepared by the reaction of phenylmagnesium chloride with

A. HCHO

B. CH_3CHO

C. CH_3COCH_3

D. 

Answer: D

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21. An organic compound of moleular formula $C_4H_{10}O$does not react with sodium. With excess of HI, it gives only one type of alkyl halide. The compound is.

A. Ethoxyethane

B. 2-Methoxypropane

C. 1-Methoxypropane

D. 1-Butanol

Answer: A

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22. An unknown compound dissolves in conc. Sulphuric acid,but does not decolurise bromine water and does not react with sodium. Which of the following classes of molecules would be have in this manner ?

A. Alkene

B. Alcohol

C. $R - OR$

D. Phenol.

Answer: C

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23. Epichlorohydrin is

A. 3-Chloropropan-2-ol

B. 3-Chloropropan-1-ol

C. 3-Chloro-1,2-eposypropane

D. None of these

Answer: C

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24. When a mixture of ethanol and methanol is heated in the presence of concentreated H_2SO_4, the resulting organic product/ products is/ are

A. $CH_3OC_2H_5$

B. CH_3OCH_3 and $C_2H_5OC_2H_5$

C. $CH_3OC_2H_3$ and CH_3OCH_3

D. $CH_3OC_2H_5.CH_3OCH_3$ and $C_2H_5OC_2H_5$.

Answer: D

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25. It is advised to store ehter in brown bottles with the addtions of a small quantity of ethanol. This is done to.

A. prevent evaporation

B. inhabit reaction

C. prevent isomerism

D. prevent peroxidation

Answer: D

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Brain Teasers 11

1. Lysol is solution of cresol in

A. Soaphy water

B. Simple water

C. Acid

D. Heavy water

Answer: A

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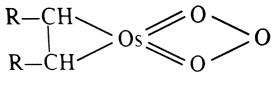
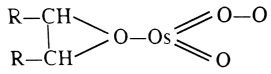
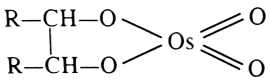
Brain Teasers 12

1. OsO_4 when treated with

$R - CH = CH - R$ gives

A. 

B. 

C. 

D. none of the above.

Answer: C

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Brain Teasers 13

1. Proof spirit contains.

A. 50% alcohol by volume

B. 40% alcohol by volume

C. 57.1% alcohol by volume

D. 49.3% alcohol by volume

Answer: C

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Brain Teasers 14

1. An industrial method of preparation of methanol is

A. Catalytic reduction of carbon monoxide in presence of $ZnO - Cr_2O_3$

B. By reacting methane with steam at $900^\circ C$ with Nickel catalyst

C. By reduction of formaldhyde with lithium aluminium hydride

D. By reaction of fomuladehyde with aq. NaOH solution.

Answer: A

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Brain Teasers 15

1. Ethers can be used as

A. General anaesthetic

B. Refrigerant

C. In perfumery

D. All the above.

Answer: D

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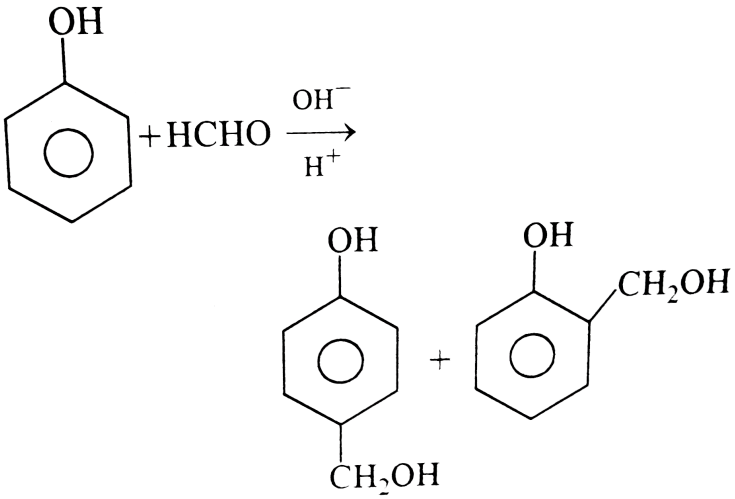
Brain Teasers 16



1.

This reaction is called

A. Diels Alder reaction

B. Lederer Manase reaction

C. Hoesch synthesis

D. Mannich reaction.

Answer: B

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Brain Teasers 17

1. Fusel oil is a mixture of

A. Alcohols

B. Carboxylic acids

C. Aliphatic hydrocarbons

D. Aromatic hydrocarbons

Answer: A

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Brain Teasers 18

1. In India, ethyl alcohol is mainly manufactured by

A. Destructive distillation of wood

B. Hydrogenation of CO

C. Fermentation of molasses

D. Catalytic oxidation of ethane.

Answer: C

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Brain Teasers 19

1. Treatment of phenol with nitrous acid $(NaNO_2 + HCI)$ give mainly

A. p-Nitrosophenol

B. p-Nitrophenol

C. Picric acid

D. m-Nitrophenol.

Answer: A

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Brain Teasers 20

1. Syphinic acid is

A. 2-Ketocatechol

B. 3,5-Dinitroresorcinol

C. 2,4-Dinitroresorcinol

D. 2,4,6-Trinitroresorcinol.

Answer: D

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Brain Teasers 21

1. Ziesel's method involves the estimation of

A. $-OCH_3$ and $-OC_2H_5$ groups

B. $-CH_3$ and $-C_2H_5$ groups

C. CH_3COO- and $C_2H_3CH_2COO-$ groups

D. All the above.

Answer: A

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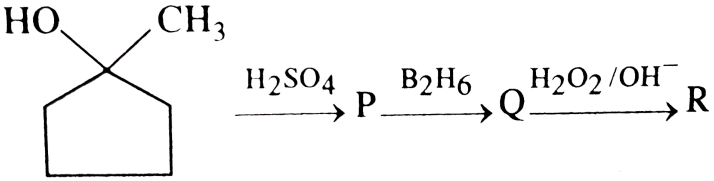
Brain Teasers 22

1. Predict the product R in the reaction



A. 1-Methylcyclopentanol

B. 2-Methylcyclopentanol

C. 2-Methylcyclopentene

D. Cyclohexane

Answer: B

View Text Solution

Brain Teasers 23

1. Cyclohexanol $\xrightarrow[[O]]{HNO_3} X \xrightarrow[[O]]{HNO_3} Y$ The product Y here is

A. Cyclohexanoic acid

B. Adipic acid

C. Stearic acid

D. Malonic acid

Answer: B

View Text Solution

Brain Teasers 24

1. Isopropyl alcohol is heated on a water bath with the suspension of bleaching powder. Which of the following products will be formed ?

A. isopropyl chloride

B. trichloromethane

C. propane

D. ethanol

Answer: B

View Text Solution

Brain Teasers 25

1. CH_3CI

overset(Mg)underset(["Ether"])toXoverset(CH_3COCI)underset(["Hydrolysis"])t

In the sequence given above, Y is

A. Acetone

B. Acetaldehyde

C. Tertiary butyl alcohol

D. Isopropyl alcohol

Answer: C

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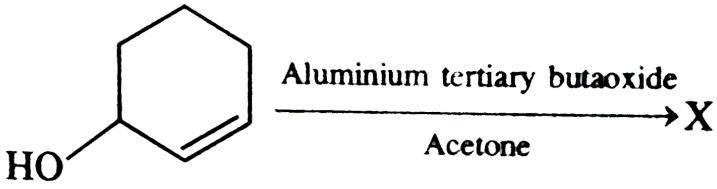
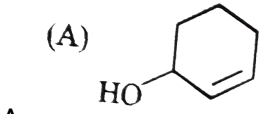
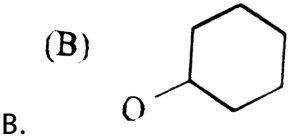
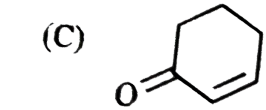
Brain Teasers 26

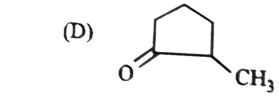
1. 

In this X is

A. 

B. 

C. 

D. 

Answer: C

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Brain Teasers 27

1. Pyroligneous acid (one of the fraction of destructive distillation of wood), does not contain

A. Stearic acid

B. Acetic acid

C. Methanol

D. Acetone

Answer: A

View Text Solution

Brain Teasers 28

1. Which reagent is most effective to convert But-2-enal to but-2-en-1-ol?

A. $K_2Cr_2O_7 / H_2SO_4$

B. $KMnO_4$

C. H_2 / Pt

D. $NaBH_4$

Answer: D

View Text Solution

Brain Teasers 29

1. The correct order of increasing boiling poitns of compounds :

Pentan-1-ol(I), Butan-1-ol(II), Butan-2-ol(III), Ethanol (Iv), Methanol (V), Porpan-1-ol(VI)is

A. I lt II lt III lt IV lt V lt VI

B. VI lt V lt IV lt III lt II lt I

C. V lt IV lt VI lt III lt II lt I

D. V lt IV lt VI lt II lt III lt I

Answer: C

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Brain Teasers 30

1. Order of boiling points is-

$$\underset{(a)}{\text{Pentan}-1-ol}, \underset{(b)}{n-\text{butane}}, \underset{(c)}{\text{Pentanal}}, \underset{(d)}{\text{ethoxyethane}}$$

A. I lt II lt III lt IV

B. IV lt III lt II lt I

C. II lt IV lt III lt I

D. II lt IV lt I lt III

Answer: C

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Brain Teasers 31

1. Arrange the following compounds in increasing order of their acidic strength :

Propan -1-ol 2, 4, 6-trinitrophenol, 3-nitrophenol, 3, 5-dinitrophenol, phenol, 4-methylphenol.

A. I $<$ V $<$ VI $<$ III $<$ IV $<$ II

B. I $<$ VI $<$ V $<$ III $<$ IV $<$ II

C. I $<$ II $<$ III $<$ IV $<$ V $<$ VI

D. None of these.

Answer: A

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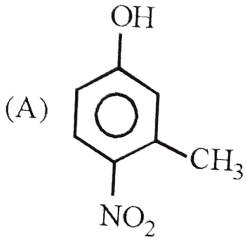
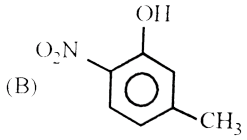
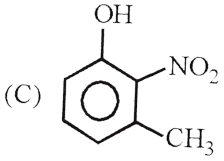
Brain Teasers 32

1. Major prduces of mononitration of 3-methyphenol is

A. 

B. 

C. 

D. Both A and B

Answer: D

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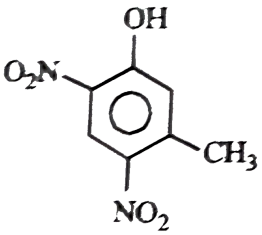
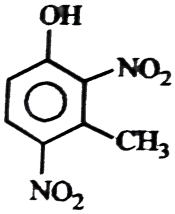
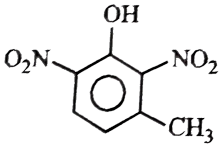
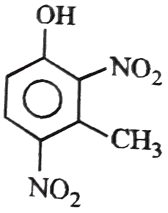
Brain Teasers 33

1. The major product of dinitration of 3-methylphenol is

A. 

B. (B) 

C. (C) 

D. (D) 

Answer: A

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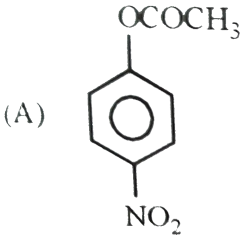
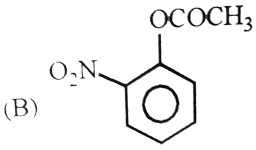
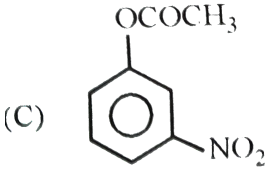
Brain Teasers 34

1. The major product of mono-ntitration of phenyl ethonate is

A. 

B. 

C. 

D. Both (A) and (B)

Answer: D

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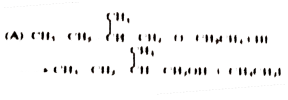
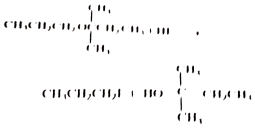
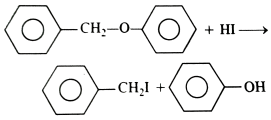
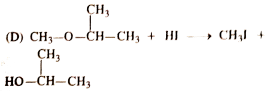
Brain Teasers 35

1. Pick out the equation in which the products formed is not correct ?

A. 

B. 

C. 

D. 

Answer: B

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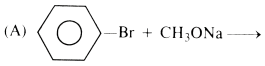
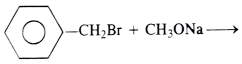
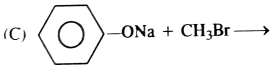
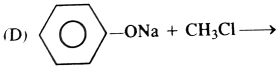
Brain Teasers 36

1. Which of the following will not produce an ether by Willanson synthesis ?

A. 

B. 

C. 

D. 

Answer: A

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Brain Teasers 37

1. Which of the following will not produce an ether by Willanson synthesis ?

A. $CH_3Br + CH_3 - \overset{CH_3}{\underset{CH_3}{\overset{|}{\underset{|}{C}}}} - ONa$

B. $CH_3ONa + CH_3 - \overset{CH_3}{\underset{CH_3}{\overset{|}{\underset{|}{C}}}} - Br$

C. $CH_3Br + CH_3 - CH_2 - Ona$

D. $CH_3CI + CH_3CH_2ONa$

Answer: B

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Brain Teasers 38

1. Best method to prepare absolute alcohol from ordinary alcohol is by

A. dehydration with anhydrous $CuSO_4$

B. dehydration with CaO

C. azeotropic distillation after mixing it with benzene.

D. none of these.

Answer: D

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Brain Teasers 39

1. Highest percentage of alcohol formed by fermentation is

A. $14\ \%$

B. $95\ \%$

C. $59\ \%$

D. $100\ \%$

Answer: A

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Brain Teasers 40

1. What is not correct about a crown-ether ?

A. It allows inorganic compounds to dissovles in non- polar solvents

B. It forms inclusion compound

C. Its molecular model resemble crowns

D. All are correct.

Answer: D

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Brain Teasers 41

1. Ethanol cannot be obtained by

A. fermentation of sugers in molasses

B. fermentation of starach in rice

C. hydration of ethene

D. destructive distillation of wood.

Answer: D

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Brain Teasers 42

1. The major component of oil of cloves is

A. anisole

B. phenatole

C. eugenol

D. anithole.

Answer: C

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Brain Teasers 43

1. Which of the following is used as a heat transfer medium due to its high b.pt. (531K) ?

A. Glycerol

B. Glycol

C. Diphenyl ether

D. Anisole.

Answer: C

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Brain Teasers 44

1. Isoflurane -an ether is used as

A. a flavouring agent

B. a solvent

C. an inhalation anaesthetic

D. a perfume

Answer: C

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Brain Teasers 45

1. Vanillin - Present in oil of Vanilla bean is

A. an aliphatic ether

B. an alcohol

C. an ester

D. a ring substituted anisole.

Answer: D

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Brain Teasers 46

1. Ethrane is used as

A. a flavouring agent

B. a solvent

C. an inhalation anaesthetic

D. a perfume

Answer: C

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Brain Teasers 47

1. Vanilin is a ring substituted anisole with

A. a phenolic group

B. an aldehydic group

C. both (A) and (B)

D. an ester group

Answer: C

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Brain Teasers 48

1. Reimer Tiemann reaction is an electrophillic substitution reaction in which the electrophile is

A. $\hat{} + CCI_3$

B. $\hat{} + CHCI_2$

C. $: CCI_2$

D. none of these

Answer: C

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Brain Teasers 49

1. Thymol a flavouring agent present in thyme and mint is

A. an ester

B. an ether

C. a phenol

D. an alcohol

Answer: C

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Brain Teasers 50

1. The main component/compounds provided by crushed grapes for wine making is/are

A. sugars

B. sugars and yeast

C. sugars and tartaric acid

D. sugars, yeast and tartaric acid.

Answer: B

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Unit Test 5

1. Reimer Tieman reaction involves intermediate

A. Carbonium ion intermediate

B. Carbene intermediate

C. Carbanian intermediate

D. Free radical intermediate

Answer: B

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2. Dow's reaction involves

A. Electrophilic addition

B. Nucleophilic addition

C. Electrophilic subtitution

D. Nucleophilic substitution

Answer: D

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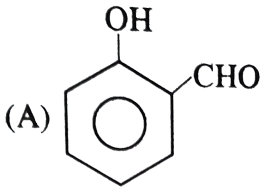
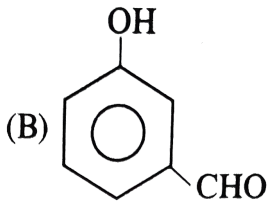
3. What is the major prudct obtained when phenol is treated with chloroform and aqueous alkali

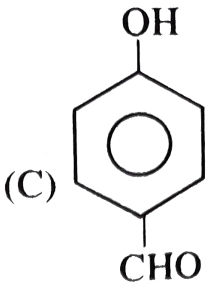
A.



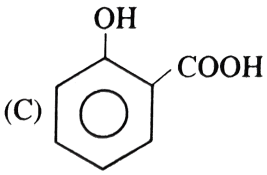
B.



C.



D.



Answer: A

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4. In Williamson's synthesis, ethoxy ethanol iws prepared by.

A. passing ethanol over heated alumina

B. heating sodium ethaoxide with ethyl bromide

C. treating ethyl alcohol with excess of H_2SO_4 at $430 - 440K$.

D. heating ehtanol with dry oxygen.

Answer: C

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5. Which of the following compound is resistant to nucleophilic attack by hydroxyl ions?

A. Methyl acetate

B. Acetonitrile

C. Acetamide

D. Diethyl ether.

Answer: B

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6. Which one/ones of the following reactions will yield 2-propanol ?

(I) $CH_2 = CH - CH_3 + H_2O \xrightarrow{H^+}$

(II) $CH_3 - CHO \xrightarrow[(ii)\, H_2O]{(i)\, CH_3Mgl}$

(III) $CH_2 \xrightarrow[(ii)\, H_2O]{(i)\, C_2H_5MgI}$

(IV) $CH_2 = CH - CH_3 \xrightarrow{\text{Neutral } KMnO_4}$

A. I and III

B. II and III

C. III and I

D. II and IV

Answer: A

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7. The reagent required to convert propene to 1-propanol

A. B_2H_6 followed by $H_2O_2 / NaOH$

B. conc.H_2SO_4 followed by hydrolysis with boiling water

C. HBr followed by hyrolyses with aqueous KOH

D. $Hg(OCOCH_3)_2$ followed by redcution with $NaBH_4$

Answer: A

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8. Oxymercuration -demurcuration reaction of 1-methyl cyclohexene gives

A. cis-2-Methyl cyclohexene gives

B. trans-2-Methyl cyclohexanol

C. 1-Methyl cyclohexanol

D. Mixture of cis and trans-2-methyl cyclohexanol.

Answer: C

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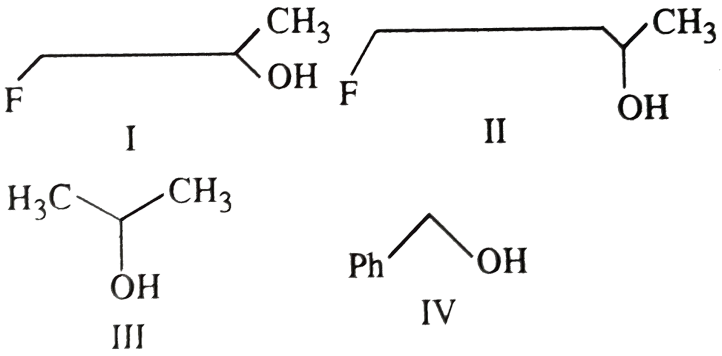
9. The order of reactivity of tghe following alcohols towards HCI is



A. I gt II gt III gt IV

B. I gt III gt II gt IV

C. IV gt III gt II gt I

D. IV gt III gt I gt II.

Answer: C

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10. Identify X in the following sequence

$$C_3H_8O \xrightarrow[[H_2SO_4]]{K_2Cr_2O_7} C_3H_6O \xrightarrow[[I_2+NaOH]]{\text{Warm}} CHI_3$$

A. $CH_3CH_2CH_2CH_2OH$

B. $CH_3CHOHCH_3$

C. $(CH_3CH_2),CHOH$

D. $CH_3CH=CH_2$

Answer: B

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11. A compound is soluble in conc. H_2SO_4. It does not decolourise bromine in carbon tetrachloride but is oxidised by chromic abhydride in aqueous sulphuric acid with in two seconds, turning orange solution to blue, green and then opaque. The original compound is

A. a primary alcohol

B. a tertiary alcohol

C. an alkene

D. an ether.

Answer: A

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12. The reaction of aromatic acyl chloride and phenol in the presence of a base such as NaOH or pyridine is called

A. Kolbe's reaction

B. Perkin's reaction

C. Sandmeyer reaction

D. Schotten Baumann's reaction

Answer: D

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13. Which will undergo Fredel-Crafts alkylation reaction easily ?

A. 

B. 

C. 

D. 

Answer: C

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14. An organic compound of molecular formula $C_4H_{10}O$ does not react with sodium. With excess of HI, it gives only one type of alkyl halide. The compound is

A. Ethoxy ethane

B. 2- Methoxy propane

C. 1-Methoxy propane

D. 1-Butanol.

Answer: A

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15. Identify in the sequence

$$CH_3CH_2CH = CH_2 \xrightarrow{HBr/H_2O_2} y \xrightarrow{C_2H_5ONa} z$$

A. $(CH_3)_2CHOCH_2CH_3$

B. $CH_3CH_2CH(CH_3) - O - CH_2CH_3$

C. $CH_3(CH_2)_3 - O - CH_2CH_3$

D. $CH_3(CH_2)_4 - O - CH_3$

Answer: C

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16. Which of the following pairs of reagents would give 4-methyl 2 pentanol ?

A. $CH_3CHLiCH_3COCH_3$

B. $(CH_3)_2CHCH_2LiCH_3CHO$

C. $(CH_3)_2CHLiCH_3CH_2CHO$

D. $CH_3CH_2Li(CH_3)_2CHCHO$

Answer: B

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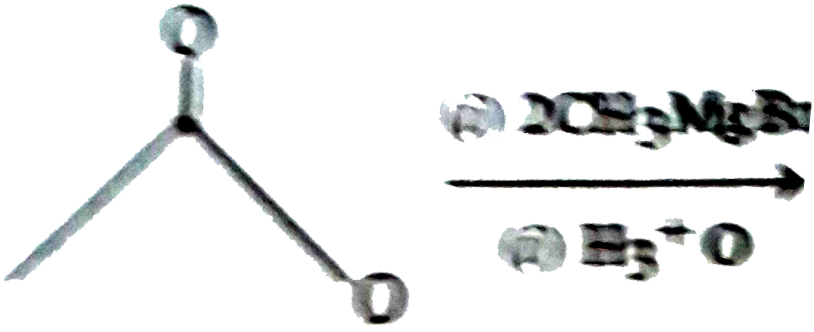
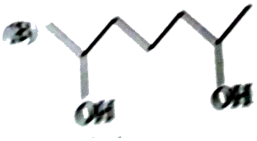
17. What is the product of the following reaction



A. 

B. 

C. Both A and B

D. None

Answer: A

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18. Which of the following cannot be made by reduction of ketone or aldehyalde with $NaBH_4$ in methanol ?

A. 1-butanol

B. 2-butanol

C. 2 methyl -1-propanol

D. 2 methyl -2-propanol

Answer: D

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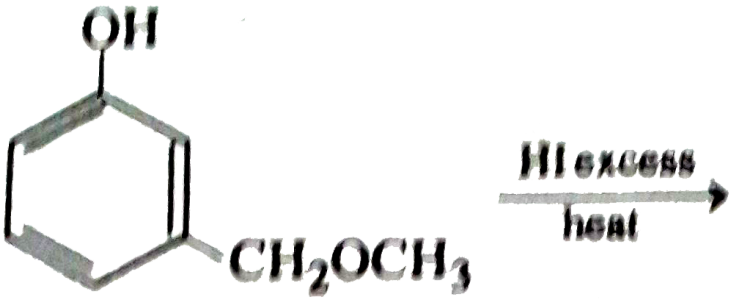
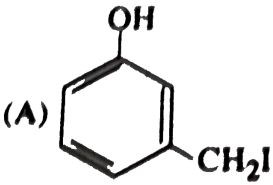
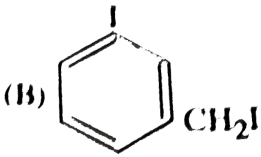
19. The correct products of the following reactions



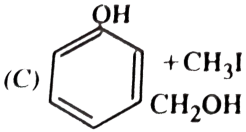
A.

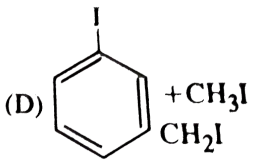


B.



C.





D.

Answer: A

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Unit Test

1. The ionization constant of a phenol is higher than that of ethanol because

A. Phenoxide ion is stronger than those of ethoxide ion

B. Pheboxide is stablisezed by delocalization

C. Phenoxide ion is less stable than ethoxide ion

D. Phenoxide ion is bulkier than ethoxide ion

Answer: B

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