



# CHEMISTRY

## BOOKS - MTG WBJEE CHEMISTRY (HINGLISH)

### ALCOHOLS AND ETHERS

**Wb Jee Workout Category 1 Single Option  
Correct Type 1 Mark**

1. In  $CH_3CH_2OH$  the bond that undergoes hetrolytic change most readily is

A. C-C

B. C-O

C. C-H

D. O-H

**Answer: A**



**View Text Solution**

2. Lucas reagent is

A. conc. HCl and anhydrous  $ZnCl_2$

B. conc.  $HNO_3$  and hydrous  $ZnCl_2$

C. conc. HCl and hydrous  $ZnCl_2$

D. conc.  $HNO_3$  and anhydrous  $ZnCl_2$

**Answer: D**



**View Text Solution**

3. Methanol is industrially prepared by

A. oxidation of  $CH_4$  by steam at  $900^\circ C$

B. reduction of HCHO using  $LiAlH_4$

C. reaction of HCHO with a solution of  
NaOH

D. reduction of CO using  $H_2$  and  
 $ZnO - Cr_2O_3$

**Answer: D**



**View Text Solution**

4. Which one of the following on oxidation gives a ketone?

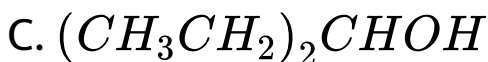
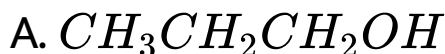
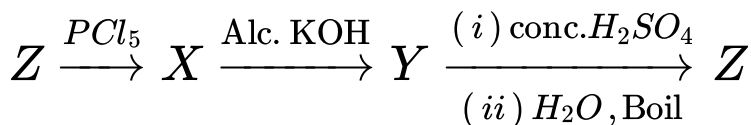
- A. Primary alcohol
- B. Secondary alcohol
- C. Aldehyde
- D. All of these

**Answer: B**



**View Text Solution**

5. What is Z in the following sequence of reactions ?

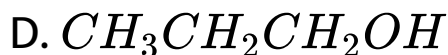
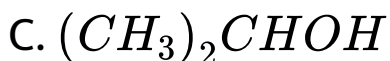
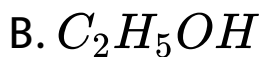
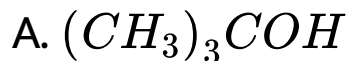


**Answer: B**



**View Text Solution**

6. Victor Meyer's test is not given by

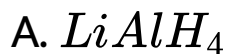
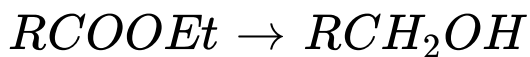


**Answer: A**



**View Text Solution**

7. The most appropriate reagent to convert



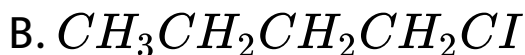
**Answer: A**



**View Text Solution**



8. The molecule with maximum boiling point is



**Answer: C**



**View Text Solution**

9. Absolute alcohol cannot be prepared from rectified spirit by simple distillation because

A. the boiling points of water and alcohol are very close

B. water and alcohol form a constant boiling azeotropic mixture

C.  $C_2H_5OH$  forms H-bonds with water

D. alcohol molecules are highly hydrated.

**Answer: B**

10. Ethanol cannot be dried over anhydrous  $CaCl_2$  because

A.  $CaCl_2$  dissolves in it

B. it forms a solid alcoholate i.e.



C. it is not a good dehydrating agent

D. it reacts with  $CaCl_2$  to form  $H_2$  gas.

**Answer: B**



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11. Rectified spirit is denatured by adding

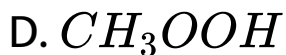
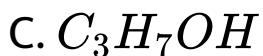
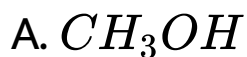
- A. methyl alcohol and formic acid
- B. methyl alcohol and benzene
- C. methyl alcohol and pyridine
- D. methyl alcohol and acetic acid.

**Answer: C**



[View Text Solution](#)

12. Alcoholic beverages contain



**Answer: B**



**View Text Solution**

13. Primary, secondary and tertiary alcohols may be distinguished by converting them into the corresponding nitroparaffins which are then treated with

A. aqueous NaOH

B. conc.  $H_2SO_4$

C. conc. HCl

D.  $NaNO_2 + \text{dilHCl}$

**Answer: D**



**View Text Solution**

14. A neutral compound gives red colour with ceric ammonium nitrate. This suggests the compound contains a/an

A. alcoholic group

B. aldehyde group

C. ketonic group

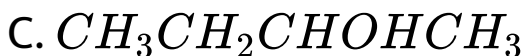
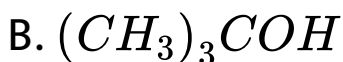
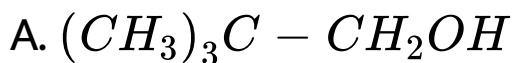
D. ether group.

**Answer: A**





15. Which of the following alcohols on oxidation give carboxylic acids with lesser number of carbon atoms?

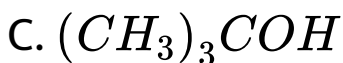
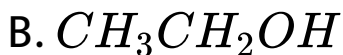
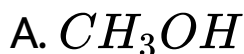


D. Both (b) and (c)

**Answer: D**



16. Which of the following alcohols will not be easily oxidised?



**Answer: C**

17. When vapours of an alcohol are passed over hot reduced copper, it gives an alkene.

The alcohol is

A. primary

B. secondary

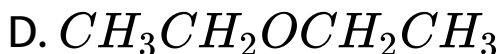
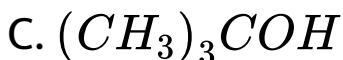
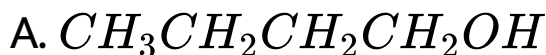
C. tertiary

D. none of these.

**Answer: C**



18. Which of the following compounds will give yellow precipitate on warming with a solution of iodine and aqueous alkali?

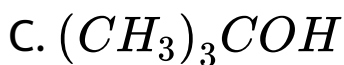
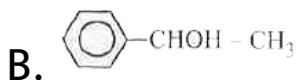


**Answer: B**



View Text Solution

19. Which of the following reacts fastest with concentrated HCl?



Answer: B



View Text Solution

20. Wood spirit is the common name of

A. methyl alcohol

B. ethyl alcohol

C. amyl alcohol

D. benzyl alcohol.

**Answer: A**



**View Text Solution**

21. The best method to prepare 3-methylbutan-1-ol from 3-methylbut-1-ene is

A. addition of  $H_2O$  in presence of dil.



B. addition of HCl followed by hydrolysis

with  $NaOH_{(aq)}$

C. oxymercuration-demercuration

D. hydroboration-oxidation reaction.

**Answer: D**



22. In Williamson's synthesis, ethoxyethane is prepared by

A. passing ethanol over heated alumina.

B. heating sodium ethoxide with ethyl bromide

C. treating ethyl alcohol with excess of

$H_2SO_4$  at 430K-440K

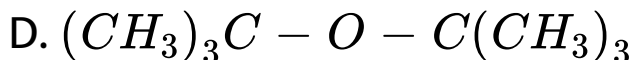
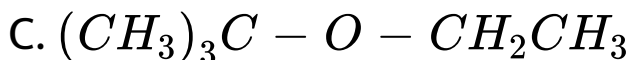
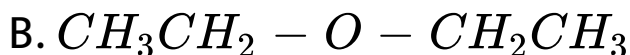
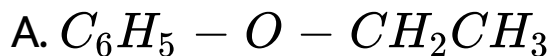
D. heating ethanol with dry  $Ag_2O$

**Answer: B**



**View Text Solution**

**23.** Which of the following ethers is cleaved even by hydrogen chloride at room temperature ?





**Answer: D**



**View Text Solution**

**24.** tert-Butyl methyl ether on heating with HI gives a mixture of

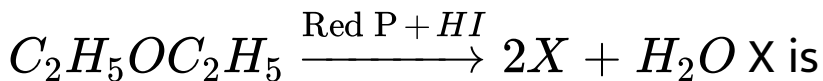
- A. tert-butyl alcohol and methyl iodide
- B. tert-butyl iodide and methanol
- C. isobutylene and methyl iodide
- D. isobutylene and methanol

**Answer: B**



**View Text Solution**

**25.** In the following reaction,



- A. ethane
- B. ethylene
- C. butane
- D. propane

**Answer: A**



**View Text Solution**

**26.** The compounds  $CH_3 - O - C_3H_7$  and  $C_2H_5 - O - C_2H_5$  exhibit

- A. optical isomerism
- B. cis-trans-isomerism
- C. metamerism
- D. chain isomerism

**Answer: C**



**View Text Solution**

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

- A. Methoxybenzene
- B. Nenzyl-p-nitrophenyl ether
- C. Tert-butyl methyl ether
- D. Di-tert-butyl ether

**Answer: C**



**View Text Solution**

**28.** Diethyl ether on heating with excess of conc. HI gives two moles of

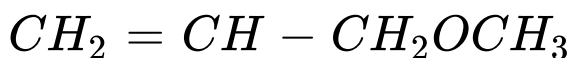
- A. ethanol
- B. 1-bromo-2-butene
- C. ethyl iodide
- D. methyl iodide.

**Answer: C**



**View Text Solution**

**29.** The IUPAC name of the following compound is



- A. allyl methyl ether
- B. 1-methoxy-2-propene
- C. 3-methoxy-1-propene
- D. vinyl dimethyl ether.

**Answer: C**



**View Text Solution**

**30.** When sodium ethoxide and ethyl bromide are heated, the product formed is

A. diethyl ether

B. ethyl alcohol

C. acetaldehyde

D. acetic acid.

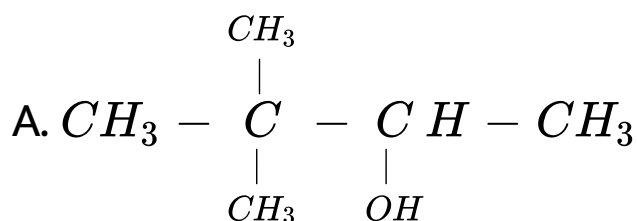
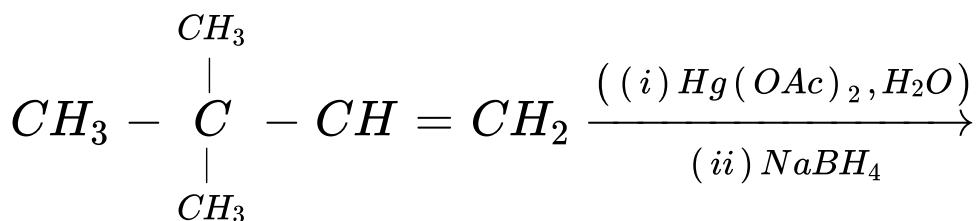
Answer: A



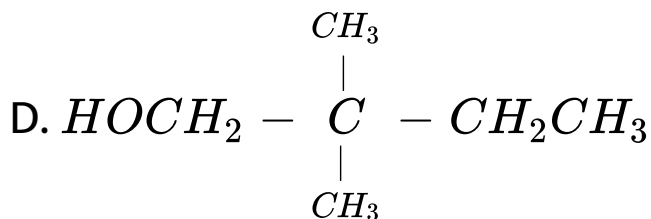
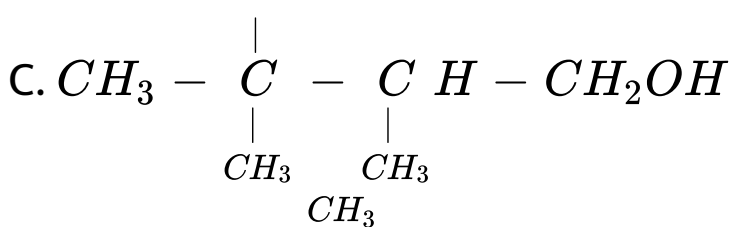
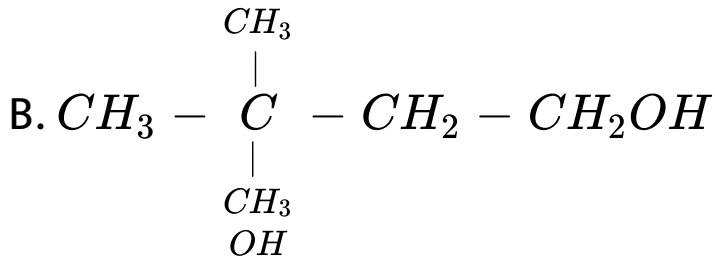
View Text Solution

Wb Jee Workout Category 2 Single Option  
Correct Type 2 Marks

1. The product of the following reaction:







**Answer: A**

 [View Text Solution](#)

2. 1-Propanol and 2-propanol can be distinguished by

A. oxidation with alkaline  $\text{KMnO}_4$  followed  
by reaction with Fehling solution

B. oxidation with acidic dichromate  
followed by reaction with Fehling  
solution

C. oxidation by heating with copper  
followed by reaction with Fehling  
solution

D. oxidation with concentrated  $\text{H}_2\text{SO}_4$   
followed by reaction with Fehling

solution.

**Answer: C**



**View Text Solution**

3. The compound A when treated with methyl alcohol and few drops of  $H_2SO_4$  gave smell of winter green. The compound A is

A. succinic acid

B. salicylic acid

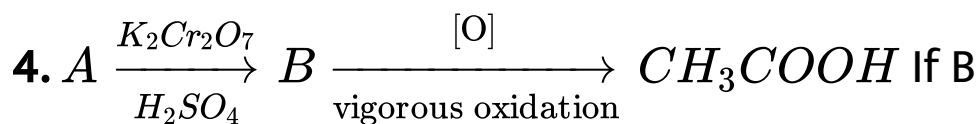
C. tartaric acid

D. oxalic acid.

**Answer: B**



[View Text Solution](#)



in the above sequence is propanone, then A is

A. ethyl alcohol

B. isopropyl alcohol

C. n-propyl alcohol

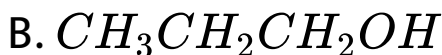
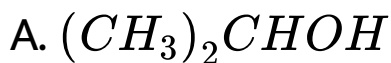
D. tert-amyl alcohol.

**Answer: B**



**View Text Solution**

5. A neutral compound with molecular formula  $C_3H_8O$  evolves  $H_2$  when treated with sodium metal and gives iodoform test. The compound is



**Answer: A**



**View Text Solution**

6. What mass of isobutylene is obtained from 37 g of tertiary butyl alcohol by heating with

20%  $H_2SO_4$  at 363 K if the yield of the reaction is 65%?

A. 12.8 g

B. 21.8 g

C. 18.2 g

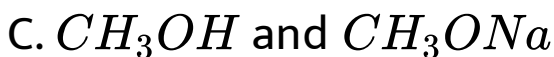
D. 28.1 g

**Answer: B**



**View Text Solution**

7. An organic compound A reacts with sodium metal and forms B. On heating with conc.  $H_2SO_4$  at  $140^\circ C$  A gives diethyl ether. A and B are respectively



**Answer: A**



**View Text Solution**



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

A. 4

B. 3

C. 2

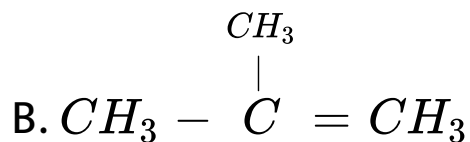
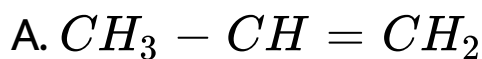
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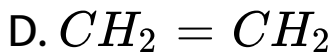
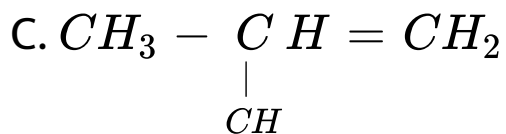
**Answer: B**



**View Text Solution**

9. Two isomeric alcohols A' and 'B' having composition, C = 60%, H = 13.3%, O = 26.7% possess the vapour density 30. When the vapours are passed separately over heated alumina results in the same product "C", which decolourises the reddish brown colour of bromine solution in  $\text{Cl}_4$ . Identify C.

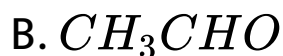
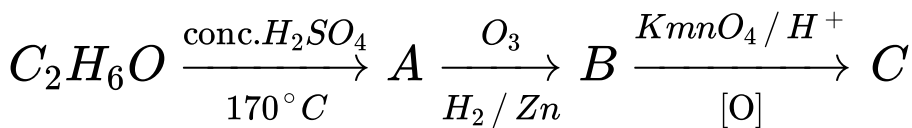




**Answer: A**

 [View Text Solution](#)

**10. Identify C in the given reaction:**



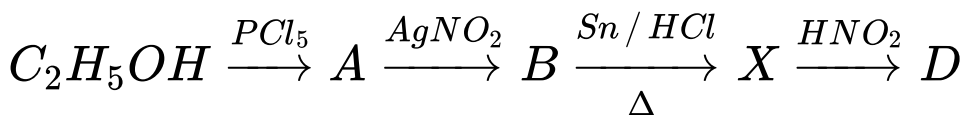
C.  $CH_3COOH$

D.  $HCOOH$

**Answer: D**

 [View Text Solution](#)

11. Identify D in the following reaction sequence.



A. Ethyl alcohol

B. Methyl alcohol

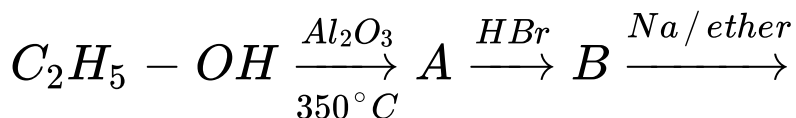
C. Nitroalkane

D. Ethane

**Answer: A**

 [View Text Solution](#)

**12.** Identify C in the following reaction sequence.



A. Ethane

B. Ethene

C. n-Butane

D. 1-Butene

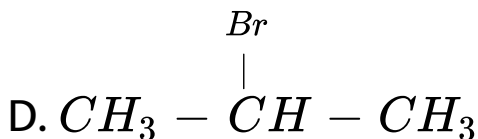
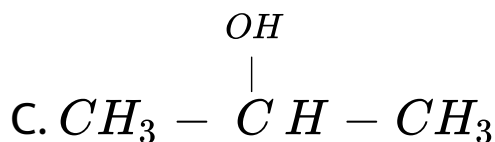
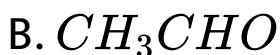
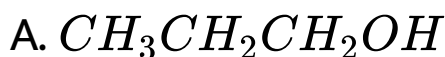
**Answer: C**



**View Text Solution**

**13.** The  $M.F. = C_3H_8O$  represents two compounds A and B. Both of them react with sodium to liberate  $H_2$  and on dehydration

results same alkene 'C'. In presence of  $H_2O_2$ , the alkene 'C' adds of HBr giving 'D', which on treatment with aqueous KOH gives 'B'. Further 'A' responds to iodoform test. Identify 'A'.



**Answer: C**



**View Text Solution**

14. What is the side product obtained during the preparation of diethyl ether by the dehydration of ethyl alcohol with concentrated  $H_2SO_4$ ?

A. Ethylene

B. Ethane

C. Alcohol

D. Ethanal



**Answer: A**



**View Text Solution**

**15.** A compound  $C_3H_8O$  is inert to sodium and when heated with excess HI yields a mixture of methyl iodide and ethyl iodide. What is the structure and name of the compound?

A. Ethyl methyl ether

B. Diethyl ether

C. Dimethyl ether

D. Isopropyl alcohol

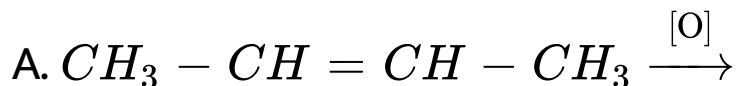
**Answer: A**

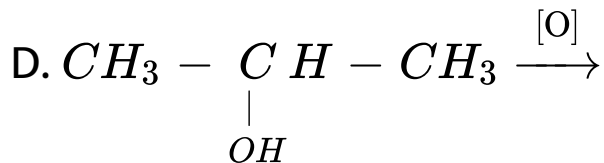
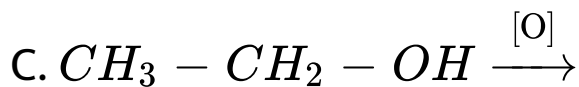
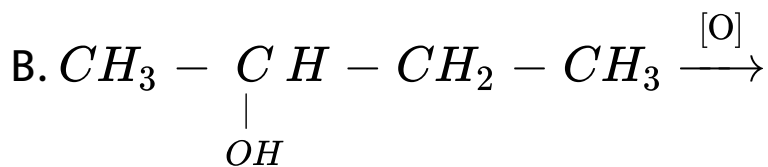


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**Wb Jee Workout Category 3 One Or More Than One Option Correct Type 2 Marks**

1. Which of the following set of reactions give acetic acid only?





**Answer: A::C::D**

 [View Text Solution](#)

2. Alkyl halide is obtained from alcohol on treating with

A.  $\text{PCl}_5$

B.  $SOCl_2$

C.  $Cl_2$

D.  $PCl_3$

**Answer: A::B::D**



**View Text Solution**

**3.** n-Propyl alcohol and iso-propyl alcohol can be distinguished by

A. using  $PCl$

B. oxidation with potassium dichromate

C.  $I_2 / NaOH$

D. reduction

**Answer: B::C**



**View Text Solution**

**4. Alcohols may act as**

A. oxidising agent

B. reducing agent

C. Lewis acid

D. Bronsted acid.

**Answer: C::D**



**View Text Solution**

5. The compounds which are used for denaturation of ethyl alcohol are

A. naphtha

B.  $CH_3OH$

C. pyridine

D. anhyd.  $CaCl_2$

**Answer: B::C**



**View Text Solution**

6. Diethyl ether can be distinguished from n-butanol by

A. aqueous  $FeCl_3$

B. reaction with Na metal

C. Tollens' reagent

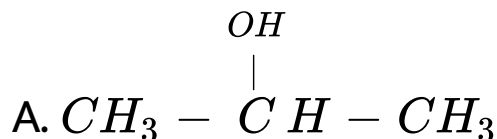
D. reaction with chromic anhydride ( $CrO_3$ )

in dil.  $H_2SO_4$

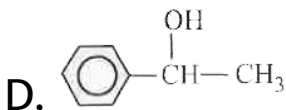
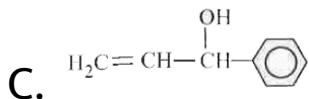
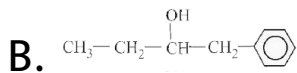
**Answer: B::D**

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7. Which of the following alcohols respond to iodoform test?







**Answer: A::D**

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8. Which of the following statements are correct for ethers?

A. Ethers act as Lewis base due to the presence lone pairs of electrons on oxygen atom.

B. The oxygen atom in ethers is  $sp^3$  hybridised.

C. Ethers generally exhibit metamerism and functional isomerism

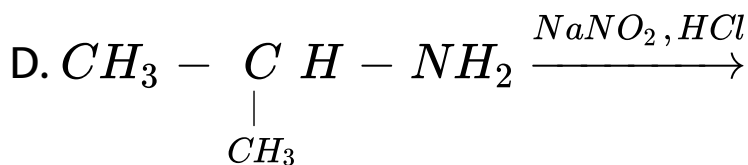
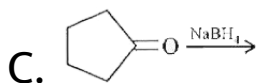
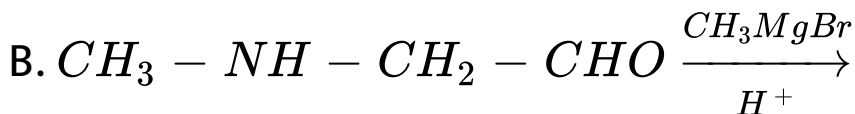
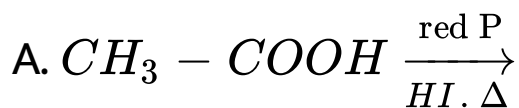
D. Ethers have zero dipole moment.

**Answer: A::B::C**



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9. Which of the following reaction(s) don't/doesn't produce alcohol?



Answer: A::B



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10. Which of the following statements are correct for ethers?

A. Being linked to carbon atoms, the oxygen atom in ether is comparatively inert.

B. The tendency of alkyl halides to undergo dehydrohalogenation in Williamson's synthesis follows the order  $3^\circ > 2^\circ > 1^\circ$ .

C. Traces of water present in ethers can be removed with Na metal because ethers do not react with sodium metal.

D. None is correct.

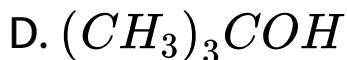
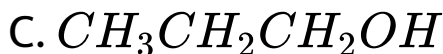
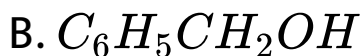
**Answer: A::B::C**



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**Wb Jee Previous Years Questions Category 1  
Single Option Correct Type 1 Marks**

1. Which of the following compounds would not react with Lucas reagent at room temperature?

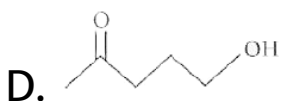
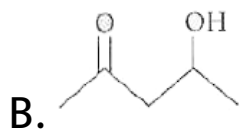
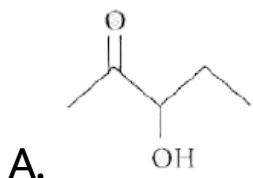


**Answer: C**



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2. Which of the following will be dehydrated most readily in alkaline medium?



**Answer: B**



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3. The number of alkene(s) which can produce 2-butanol by the successive treatment of (i)  $B_2H_6$  in tetrahydrofuran solvent and (ii) alkaline  $H_2O_2$  solution is

A. 1

B. 2

C. 3

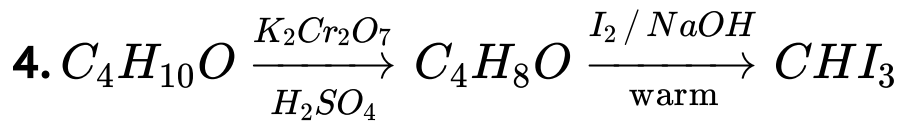
D. 4

**Answer: B**

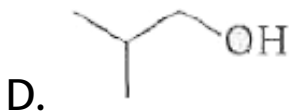
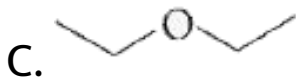
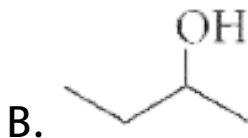




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Here N is



Answer: B

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5. Cyclopentanol on reaction with NaH followed by  $CS_2$  and  $CH_3I$  produces a/an

A. ketone

B. alkene

C. ether

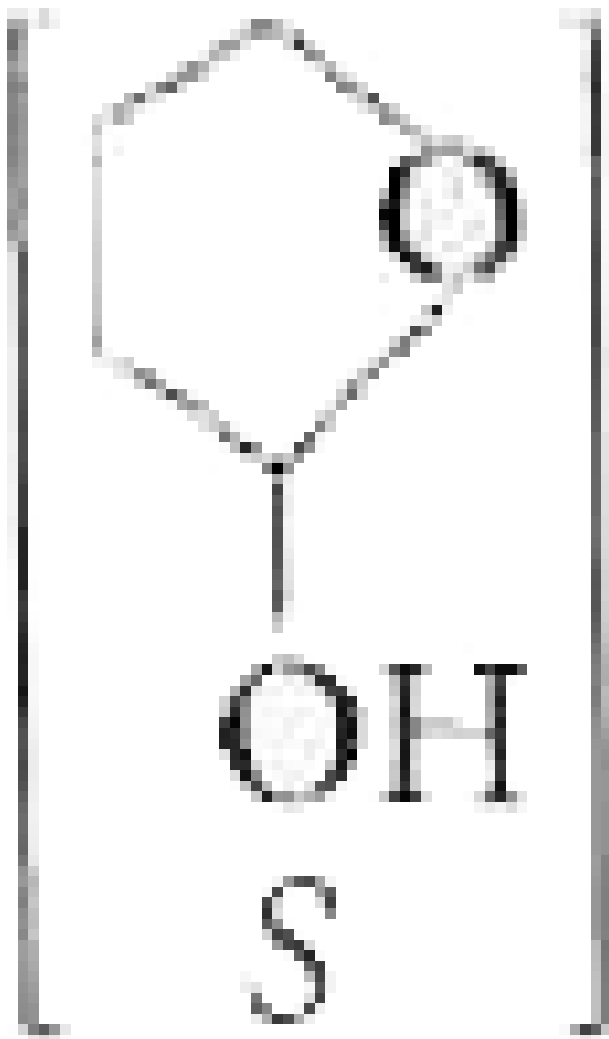
D. xanthate

**Answer: D**

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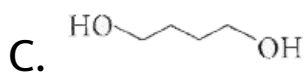
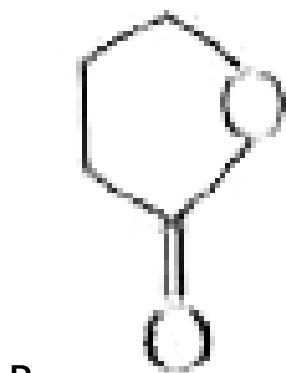
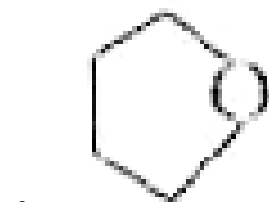
**Wb Jee Previous Years Questions Category 2  
Single Option Correct Type 2 Marks**

1. Reduction of the lactol S



with

sodium borohydride gives

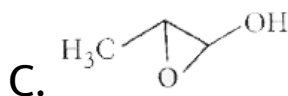
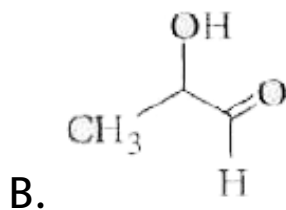


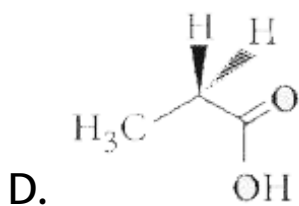
**Answer: C**



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2. Oxidation of allyl alcohol with a peracid gives a compound of molecular formula  $C_3H_6O_2$  which contains an asymmetric carbon atom. The structure of the compound is





**Answer: A**

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**Wb Jee Previous Years Questions Category 3 One Or More Than One Option Correct Type 2 Marks**

1. Correct statement(s) in cases of n-butanol and t-butanol is (are)

- A. both are having equal solubility in water
- B. t-butanol is more soluble in water than n-butanol
- C. boiling point of t-butanol is lower than n-butanol
- D. boiling point of n-butanol is lower than t-butanol.

**Answer: B::C**



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