

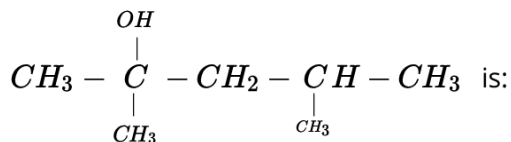
ULTIMATE KCET CRASH COURSE 2026

CHEMISTRY

DPP: 1

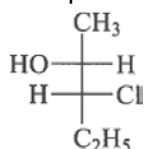
ALCOHOLS, PHENOLS, ETHERS

Q1 The IUPAC name of



- (A) 2,4-dimethylpentan-2-ol
 (B) butanol-2
 (C) 2,4-dimethylpentan-4-ol
 (D) 2,2-dimethylbutan-2-ol

Q2 What is the full name of the following compound ?

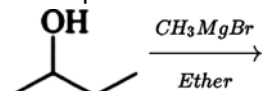


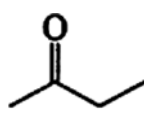
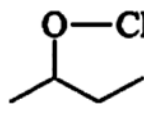
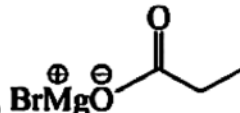
- (A) (2S, 3R) — 3 — chloro — 2 — pentanol
 (B) (2R, 3S) — 3 — chloro — 2 — pentanol
 (C) (2R, 3R) — 3 — chloro — 2 — pentanol
 (D) (2S, 3S) — 3 — chloro — 2 — pentanol

Q3 Among the following the most stable compound is

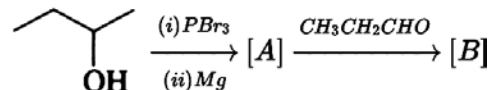
- (A) cis-1, 2-cyclohexanediol
 (B) trans-1, 3-cyclohexanediol
 (C) cis-1, 3-cyclohexanediol
 (D) trans-1, 2-cyclohexanediol


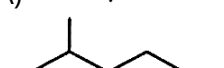
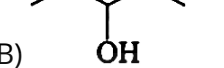
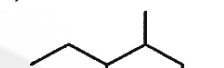
Q4 Find product of following reaction,



- (A) CH_4
 (B) 
 (C) 
 (D) 

Q5 The correct structure for compound B will be:



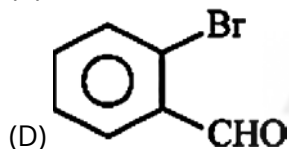
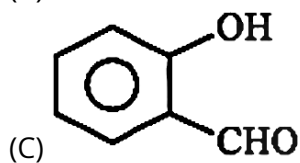
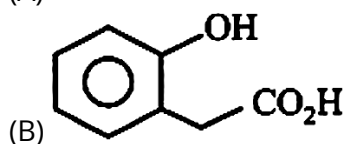
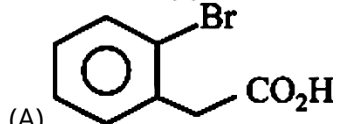
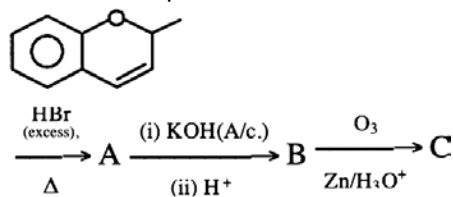
- (A) 
 (B) 
 (C) 
 (D) 

Q6 What is the correct order of boiling points of alcohols having the same number of carbon atoms ?

- (A) $1^\circ > 2^\circ > 3^\circ$
 (B) $3^\circ > 2^\circ > 1^\circ$
 (C) $3^\circ > 1^\circ > 2^\circ$
 (D) $2^\circ > 1^\circ > 3^\circ$



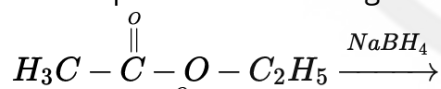
Q7 The major aromatic product C in the following reaction sequence will be:



Q8 Which of the following will not be soluble in sodium hydrogen carbonate ?

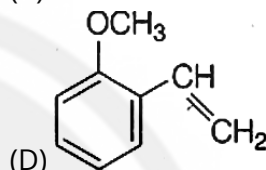
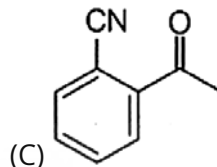
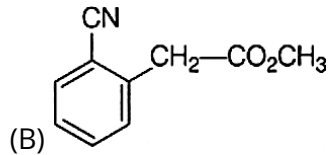
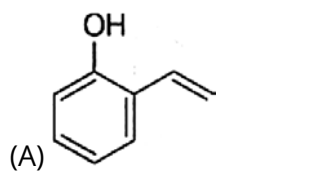
- (A) Benzoic acid
 (B) Benzene sulphonic acid
 (C) o-Nitrophenol
 (D) 2, 4, 6-Trinitrophenol

Q9 Predict product of following reaction,

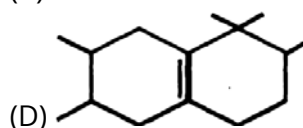
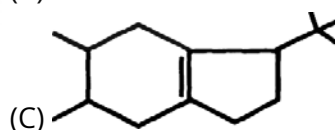
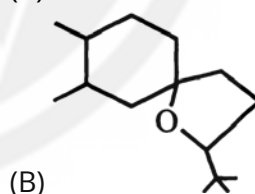
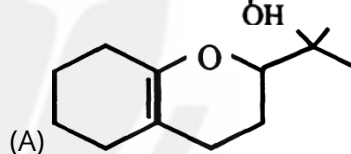
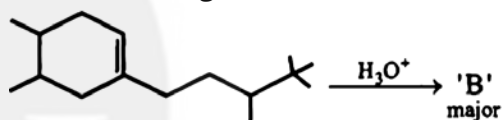


- (A) $\text{H}_3\text{C}-\overset{\text{O}}{\parallel}{\text{C}}-\text{OH}$
 (B) No reaction
 (C) $\text{H}_2\text{C}=\text{CH}_2$
 (D) $\text{CH}_3-\text{CH}_2-\text{OH}$

Q10 Which of the following compounds reacts with ethyl magnesium bromide and also decolourises bromine water solution

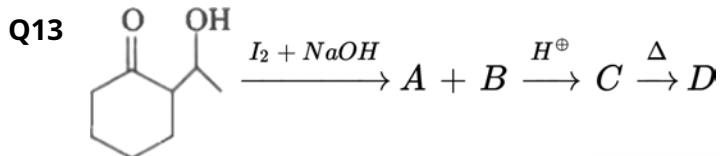


Q11 In the following reaction, B is

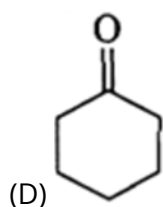
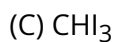
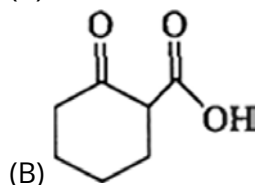
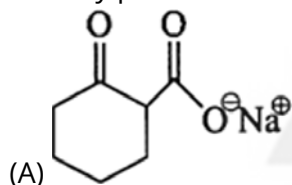


Q12 Which of the following Grignard reagent is suitable for the preparation of 3-methyl-2-butanol ?

- (A) 2-Butanone + methylmagnesium bromide
 (B) Acetaldehyde + isopropylmagnesium bromide
 (C) Ethyl propionate + methylmagnesium bromide
 (D) Acetone + ethylmagnesium bromide



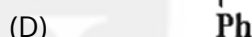
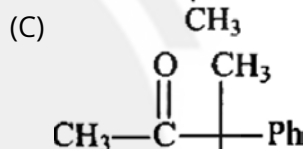
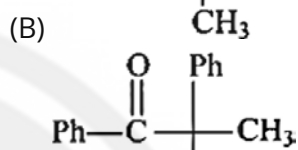
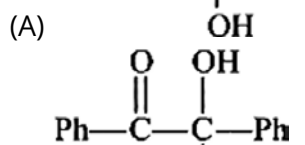
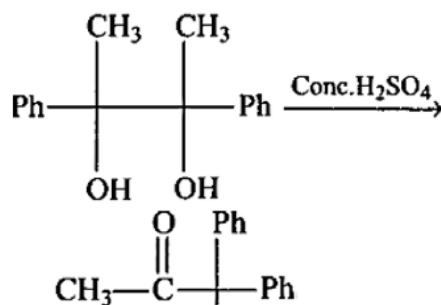
Identify product D in this reaction:



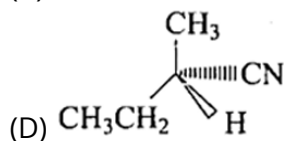
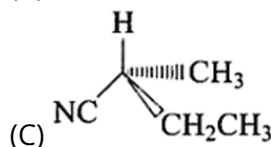
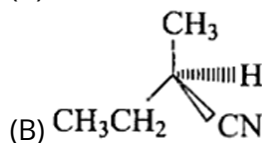
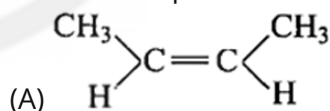
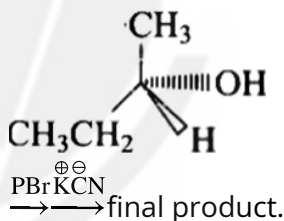
Q14 Ethers are different from their corresponding isomeric monohydric alcohols with respect to the _____.

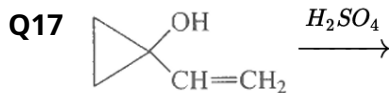
- (A) hybridization of oxygen
 (B) number of carbon atoms present
 (C) absence of replaceable active hydrogen
 (D) presence of oxygen

Q15 Find out major products of the following reactions:

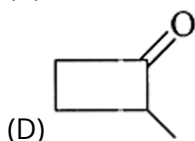
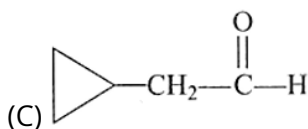
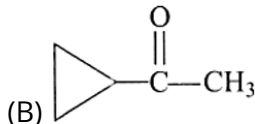
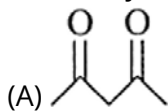


Q16



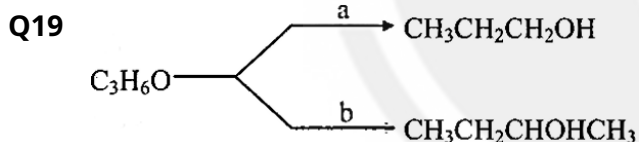


P; Identify P in the reaction:



Identify A and B.

- (A) A = Benzophenone, B = Benzoic acid
 (B) A = Benzoic acid, B = Cyclohexane
 (C) A = Benzene, B = Benzophenone
 (D) A = Benzoquinone, B = Benzene



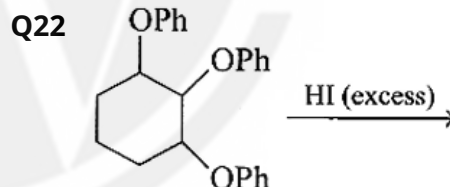
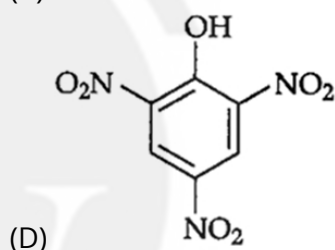
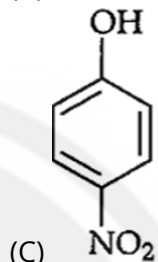
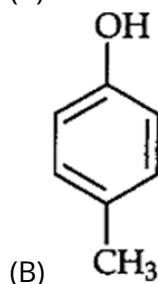
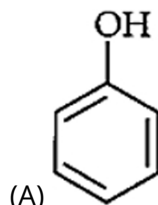
Predict a and b.

- (A) a = Na/EtOH b = H₂ - Pd
 (B) a = LiAlH₄/H₃O⁺ b = Na/NH₃
 (C) a = B₂H₆/H₂O₂ - OH⁻ b = conc. H₂SO₄/H₂O
 (D) a = Na - Hg/H₂O b = CH₃MgBr/dry ether,
 H₂O⁺

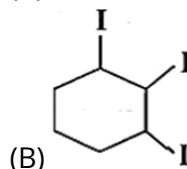
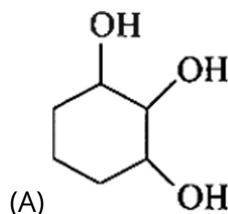
Q20 The reaction of phenol with chloroform in presence of dilute sodium hydroxide finally introduces which one of the following functional group?

- (A) -CHO (B) -CH₂Cl
 (C) -CHCl₂ (D) -COOH

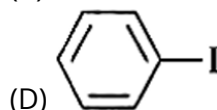
Q21 Which one of the most acidic compound?

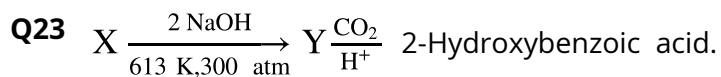


Which of the following is a major product?



(C) None of these





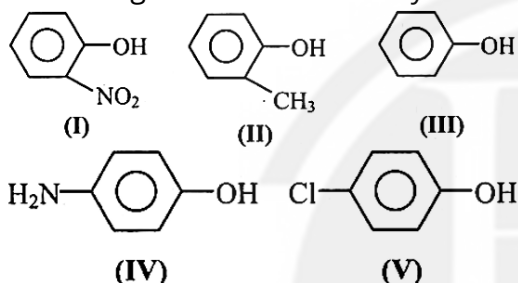
Predict X.

- (A) Phenol (B) Chlorobenzene
(C) Aniline (D) Benzene

Q24 The first step of the acid catalysed hydration of alkenes, involves the protonation of alkene to form a carbocation by electrophilic attack of _____

- (A) H_3O^+ (B) H^+
(C) OH^- (D) H_2O

Q25 Arrange the following compounds in the decreasing order of their acidity.



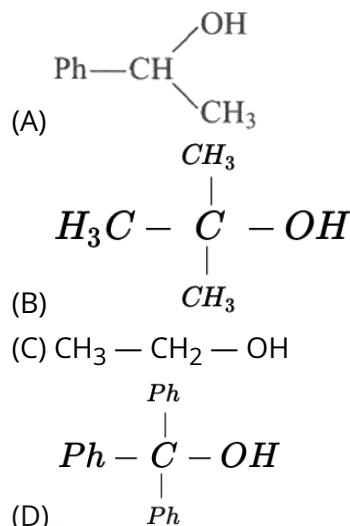
- (A) $\text{I} > \text{V} > \text{III} > \text{IV} > \text{II}$
(B) $\text{V} > \text{I} > \text{II} > \text{III} > \text{IV}$
(C) $\text{V} > \text{IV} > \text{III} > \text{II} > \text{I}$
(D) $\text{I} > \text{V} > \text{III} > \text{II} > \text{IV}$



$\xrightarrow[\Delta]{\text{Conc. H}_2\text{SO}_4}$ Major product:

- (A)
- (B)
- (C) None of these
- (D)

Q27 Which of the following alcohols will not react with Cu/Δ ?



Q28 Ethanol and dimethyl ether form a pair of functional isomers. The boiling point of ethanol is higher than that of dimethyl ether, due to the presence of:

- (A) CH_3 -group in ethanol
(B) H-bonding in ethanol
(C) H-bonding in dimethyl ether
(D) CH_3 -group in dimethyl ether

Q29 An ether (A), $\text{C}_5\text{H}_{12}\text{O}$, when heated with excess of hot concentrated HI produced two alkyl halides which when treated with NaOH yielded compounds (B) and (C). Oxidation of (B) and (C) gave a propanone and an ethanoic acid respectively. The IUPAC name of the ether (A) is:

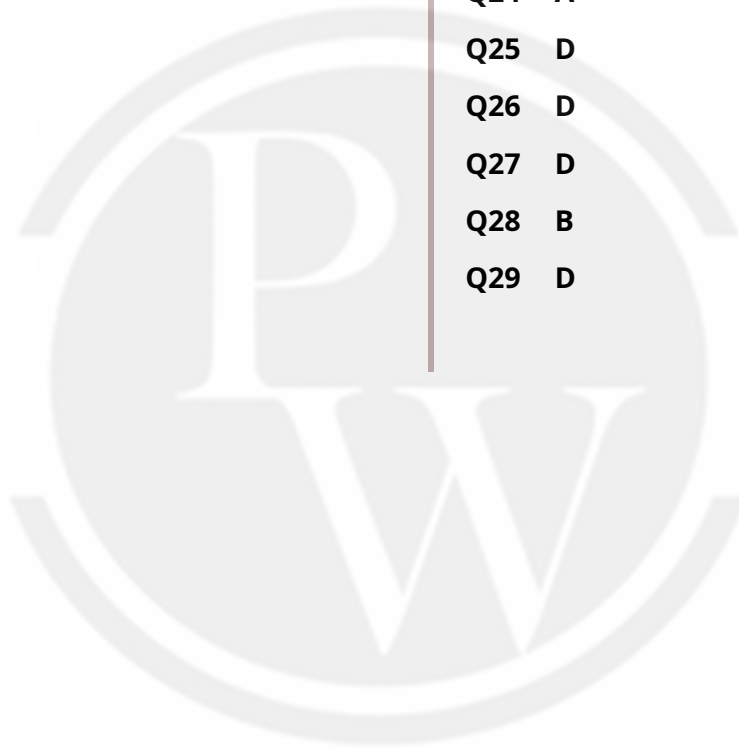
- (A) methoxybutane
(B) 2-methoxybutane
(C) ethoxypropane
(D) 2-ethoxypropane



Answer Key

Q1 A
Q2 C
Q3 B
Q4 A
Q5 C
Q6 A
Q7 C
Q8 C
Q9 B
Q10 A
Q11 D
Q12 B
Q13 D
Q14 C
Q15 D

Q16 D
Q17 D
Q18 D
Q19 D
Q20 A
Q21 D
Q22 B
Q23 B
Q24 A
Q25 D
Q26 D
Q27 D
Q28 B
Q29 D



Hints & Solutions

Note: scan the QR code to watch video solution

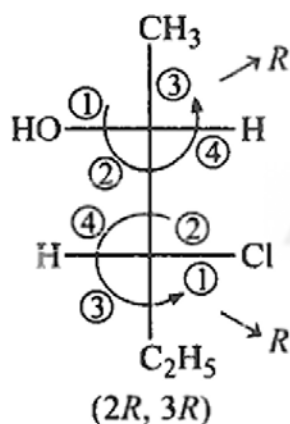
Q1 Text Solution:

2,4-dimethylpentan-2-ol

Video Solution:



Q2 Text Solution:



Video Solution:



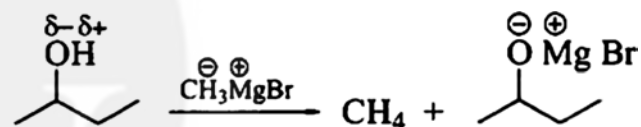
Q3 Text Solution:

Trans configuration is more stable than cis configuration because in cis-configuration the H groups are thrown closely enough together to cause crowding or repulsion. A gain between 1,2 and 1,3-configurations, in 1-3, the OH groups are placed further apart to minimize the repulsion. Hence, more stable is 1,3-configuration.

Video Solution:



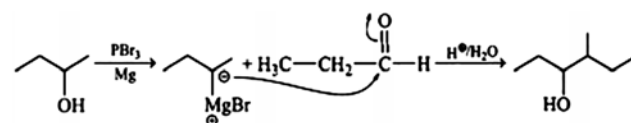
Q4 Text Solution:



Video Solution:



Q5 Text Solution:

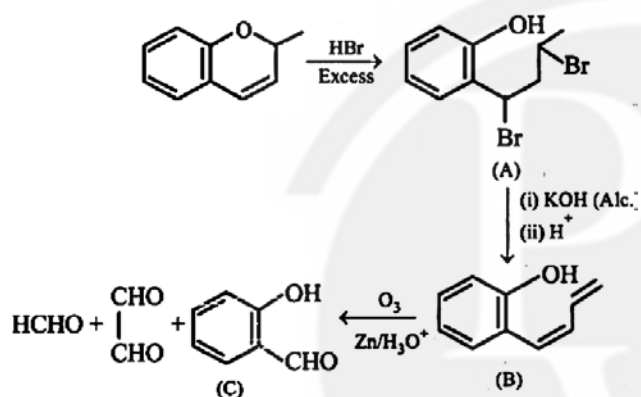


Video Solution:

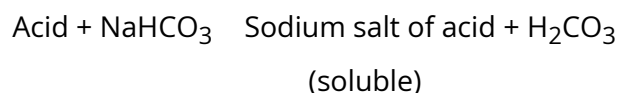


Q6 Text Solution:

As the branching in the structure increases, the surface area decreases and hence, the van der Waal forces decrease. This results in the reduction of boiling points of isomeric alcohols from primary to tertiary structures.

Video Solution:**Q7 Text Solution:****Video Solution:****Q8 Text Solution:**

Acid reacts with sodium hydrogen carbonate as follows:



Among all the given options ortho-nitrophenol is weaker acid than HCO_3^- hence, it does not react with NaHCO_3 .

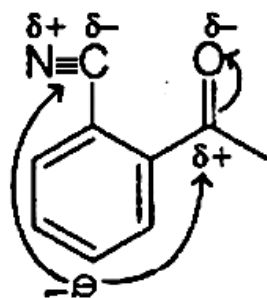
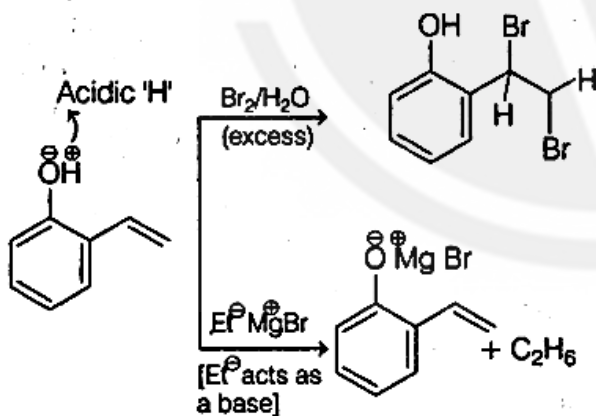
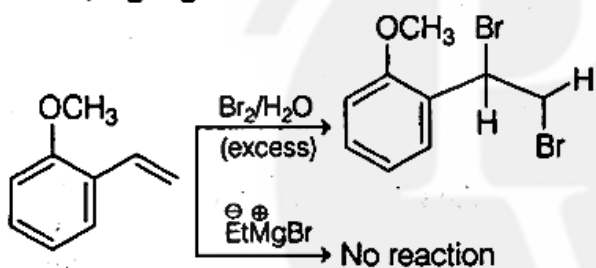
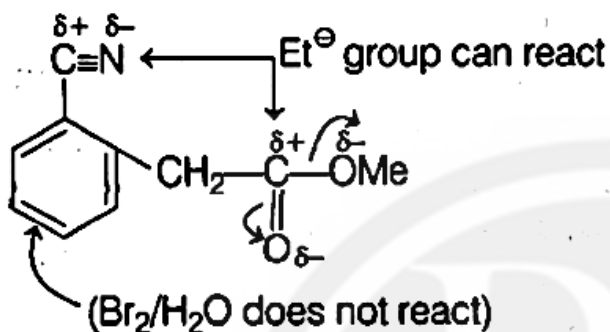
Video Solution:**Q9 Text Solution:**

NaBH_4 does not react with esters.

Video Solution:

Q10 Text Solution:

Ethyl magnesium bromide is a Grignard reagent (GR), it constitutes $C_2H_5 [C_2H_5 MgBr]$ in ether/aprotic medium] which can act as nucleophile as well as strong base. Bromine water (Br_2/H_2O , red) gets decolourised with phenol derivatives (option, c), anisole derivatives (option, b) etc., as $\backslash q = C \backslash$ is present outside the ring (aliphatic, not aromatic).

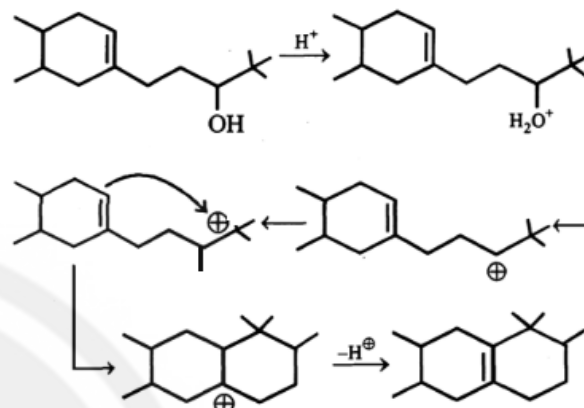


Et group can react but (Br_2/H_2O) does not react

Video Solution:



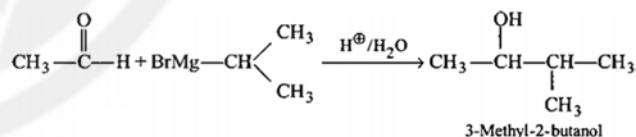
Q11 Text Solution:



Video Solution:



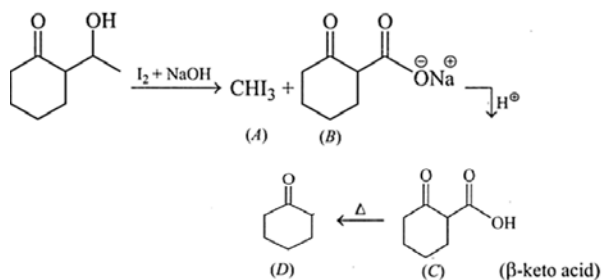
Q12 Text Solution:



Video Solution:



Q13 Text Solution:



Video Solution:



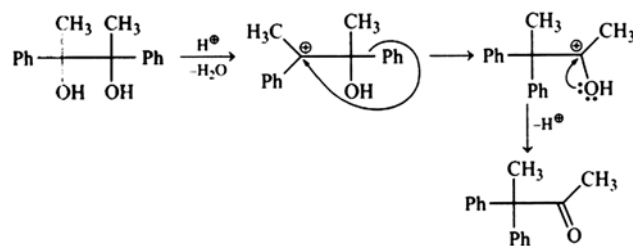
Q14 Text Solution:

In ethers, two alkyl groups are attached to oxygen atom whereas in alcohols, one alkyl group and one H-atom are linked to oxygen. Hence, ethers are different from its corresponding isomeric monohydric alcohols with respect to the absence of replaceable active hydrogen. Ethers and their corresponding monohydric alcohols are functional isomers of each other, hence they contain a same number of carbon atoms and an oxygen atom which is sp^3 hybridized.

Video Solution:



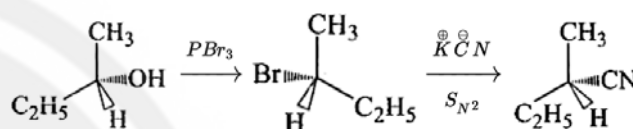
Q15 Text Solution:



Video Solution:



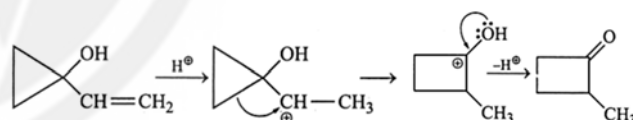
Q16 Text Solution:



Video Solution:



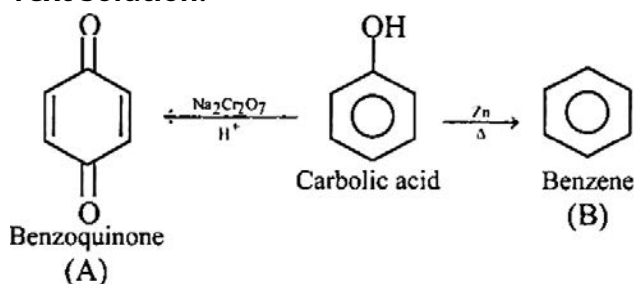
Q17 Text Solution:



Video Solution:



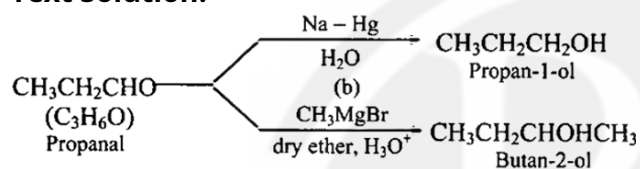
Q18 Text Solution:



Video Solution:



Q19 Text Solution:

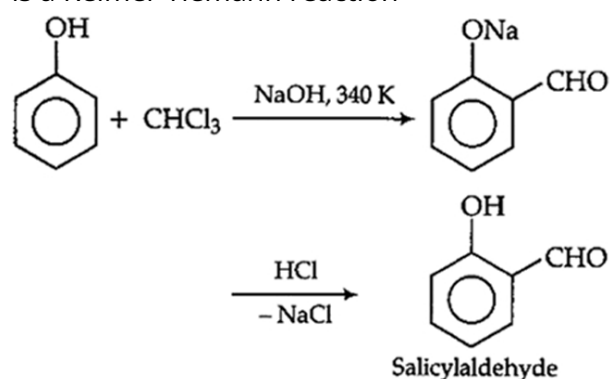


Video Solution:



Q20 Text Solution:

The description in the question suggests that it is a Reimer Tiemann reaction



Video Solution:



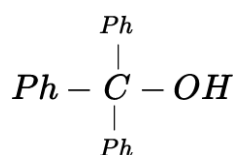
Q21 Text Solution:

Electron withdrawing group at o and p-position w.r.t. OH group of phenol, increase the acidic strength. Picric acid (2, 4, 6-trinitrophenol) is extremely more acidic among the given compounds due to the presence of three strong electron withdrawing groups (NO₂ group) at ortho and para-positions.

Video Solution:



Q27 Text Solution:

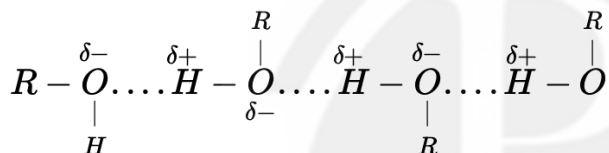


Video Solution:



Q28 Text Solution:

The OH group in alcohol contains an H bonded to a highly electronegative oxygen atom. Therefore, it is capable of forming an intermolecular H-bond as shown below:

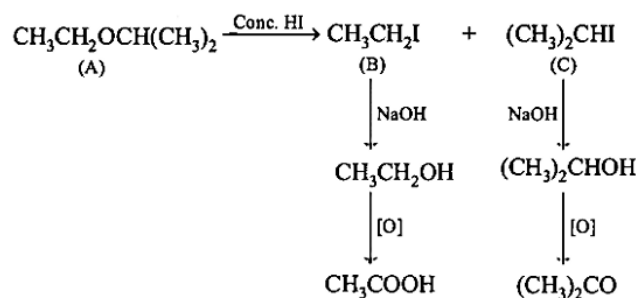


It is due to the presence of intermolecular hydrogen bonding that alcohols have higher boiling points corresponding to ether which are incapable of exhibiting intermolecular H bonding.

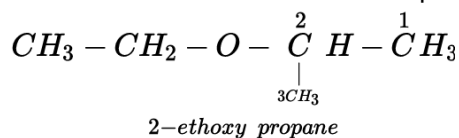
Video Solution:



Q29 Text Solution:



Hence the IUPAC name of compound (A) is



Video Solution:


[Android App](#)
[iOS App](#)
[PW Website](#)