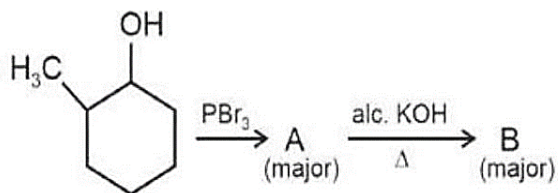
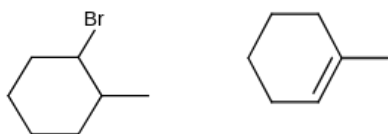


1. Alcohols and Phenols

1. Major products A and B formed in the following reaction sequence, are



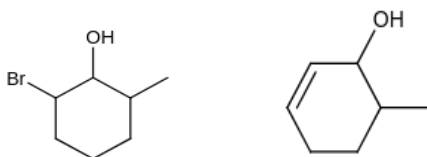
(a)



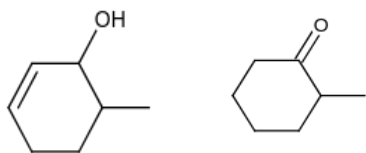
(b)



(c)



(d)

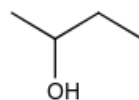


[NEET 2024]

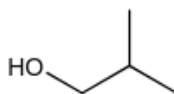
2. Which one of the following alcohols reacts instantaneously with Lucas reagent?

(a) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}_2\text{OH}$

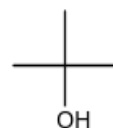
(b)



(c)

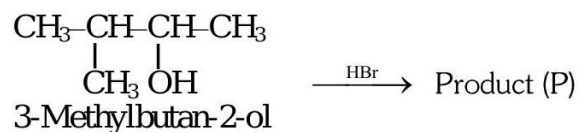


(d)

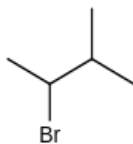


[NEET 2024]

3. Consider the following reaction and identify the product (P).

(a) $\text{CH}_3\text{CH} = \text{CH} - \text{CH}_3$

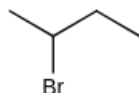
(b)



(c)



(d)



[NEET 2023]

4. Given below are two statements

Statement I:

The acidic strength of monosubstituted nitrophenol is higher than phenol because of electron withdrawing nitro group.

Statement II:

o-nitrophenol, *m*-nitrophenol and *p*-nitrophenol will have same acidic strength as they have one nitro group attached to the phenolic ring.

In the light of the above statements, choose the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are correct.
- (b) Both Statement I and Statement II are incorrect.
- (c) Statement I is correct but Statement II is incorrect.
- (d) Statement I is incorrect but Statement II is correct.

[NEET 2022]

5. Match List-I with List-II.

List –I

(Products formed)

- (a) Cyanohydrin

- (b) Acetal
- (c) Schiff's base
- (d) Oxime

List - II

(Reaction of carbonyl compound with)

- (i) NH_2OH
- (ii) RNH_2
- (iii) alcohol
- (iv) HCN

Choose the correct answer from the options given below

- (a) (a) - (iii), (b) - (iv), (c) - (ii), (d) - (i)
- (b) (a) - (ii), (b) - (iii), (c) - (iv), (d) - (i)
- (c) (a) - (i), (b) - (iii), (c) - (ii), (d) - (iv)
- (d) (a) - (iv), (b) - (iii), (c) - (ii), (d) - (i)

[NEET 2022]

6. Given below are two statements:

Statement I:

In Lucas test, primary, secondary and tertiary alcohols are distinguished on the basis of their reactivity with conc. $\text{HCl} + \text{ZnCl}_2$, known as Lucas Reagent.

Statement II:

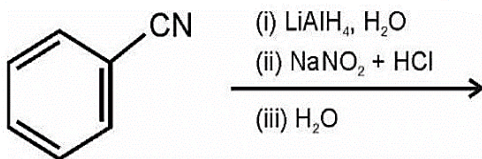
Primary alcohols are most reactive and immediately produce turbidity at room temperature on reaction with Lucas Reagent.

In the light of the above statements, choose the most appropriate answer from the options given below:

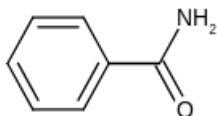
- (a) Both Statement I and Statement II are correct
- (b) Both Statement I and Statement II are incorrect
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct

[NEET 2022]

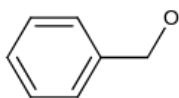
7. The product formed from the following reaction sequence is



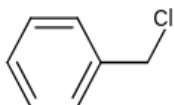
(a)



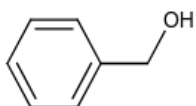
(b)



(c)



(d)



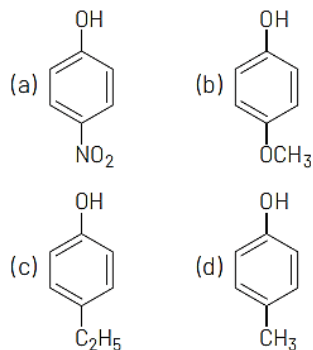
[NEET 2022]

8. The major product formed in dehydrohalogenation reaction of 2-bromopentane is pent-2-ene. This product formation is based on

- (a) Saytzeff's rule (b) Hund's rule
(c) Hoffmann rule (d) Huckel's rule

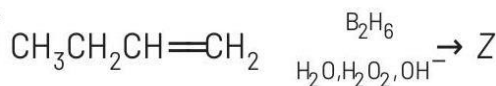
[NEET 2021]

9. Which of the following substituted phenols is the strongest acid?



[NEET 2020]

10.

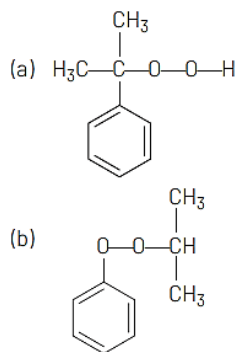
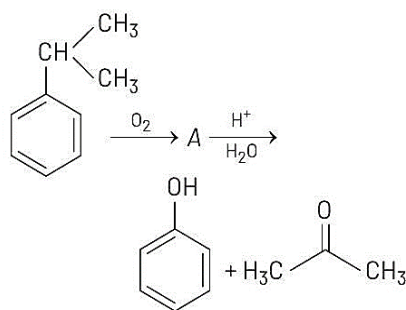


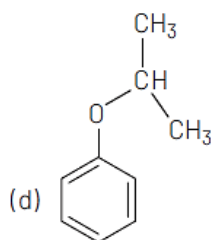
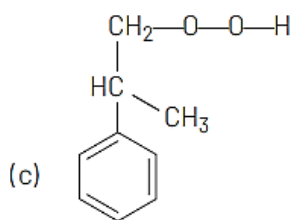
what is Z ?

- (a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$
(b) $\text{CH}_3\text{CH}_2\underset{\text{OH}}{\text{CH}}\text{CH}_3$
(c) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CHO}$ (d) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$

[NEET (Oct.) 2020]

11. The structure of intermediate A in the following reaction, is

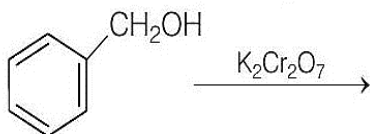




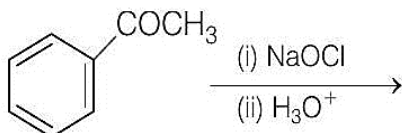
[NEET NATIONAL 2019]

12. The reaction that does not give benzoic acid as the major product is

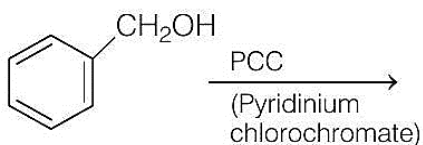
(a)



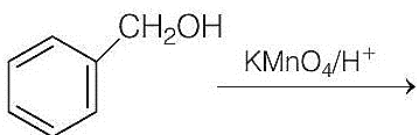
(b)



(c)



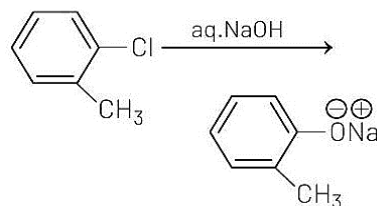
(d)



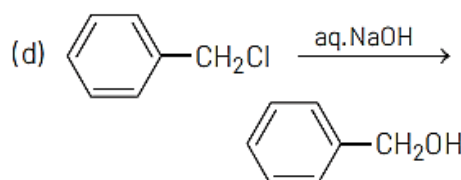
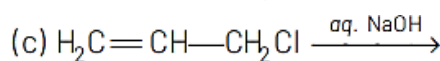
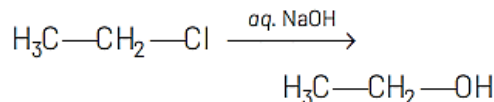
[NEET (Odisha) 2019]

13. The hydrolysis reaction that takes place at the slowest rate, among the following is

(a)



(b)



[NEET (Odisha) 2019]

14. When vapours of a secondary alcohol is passed over heated copper at 573 K, the product formed is

- (a) a carboxylic acid (b) an aldehyde
(c) a ketone (d) an alkene

[NEET (Odisha) 2019]

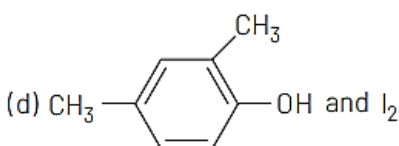
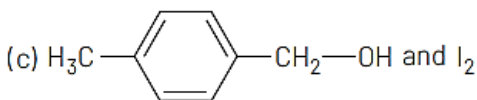
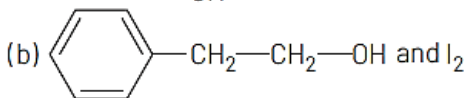
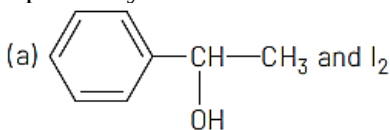
15. The compound A on treatment with Na gives B, and with PCl₅ gives C. B and C react together to give diethyl ether. A, B and C are in the order

- (a) C₂H₅Cl, C₂H₆, C₂H₅OH
(b) C₂H₅OH, C₂H₅Cl, C₂H₅ONa
(c) C₂H₅OH, C₂H₆, C₂H₅Cl
(d) C₂H₅OH, C₂H₅ONa, C₂H₅Cl

[NEET 2018]

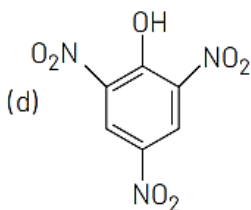
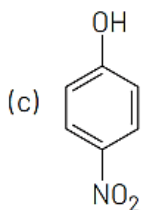
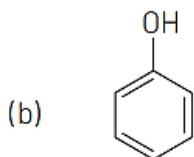
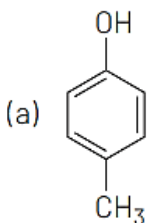
16. Compound A, C₈H₁₀O, is found to react with NaOI (produced by reacting Y with NaOH) and yields a yellow precipitate with characteristic smell. A and Y are

respectively.



[NEET 2018]

17. Which one is the most acidic compound?



[NEET 2017]

18. Which of the following reagents would distinguish cis-cyclopenta-1, 2-diol from the trans-isomer?

- (a) Ozone
- (b) MnO_2
- (c) Aluminium isopropoxide
- (d) Acetone

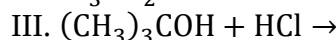
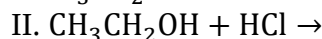
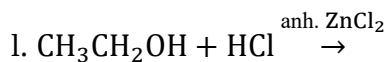
[NEET 2016, Phase II]

19. Reaction of phenol with chloroform in the presence of dilute sodium hydroxide finally introduces, which one of the following functional group?

- (a) CH_2Cl
- (b) $COOH$
- (c) $CHCl_2$
- (d) CHO

[CBSE AIPMT 2015]

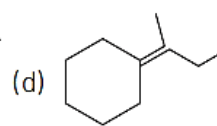
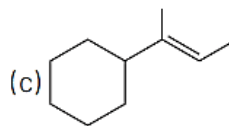
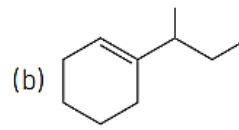
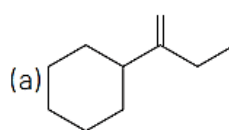
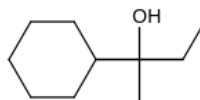
20. Which of the following reaction(s) can be used for the preparation of alkyl halides?



- (a) I, III and IV
- (b) I and II
- (c) Only IV
- (d) III and IV

[CBSE AIPMT 2015]

21. Which of the following is not the product of dehydration of



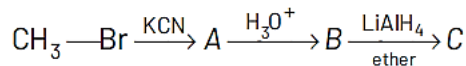
[CBSE AIPMT 2015]

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

- (a) 2,4,6-trinitrophenol
- (b) Benzoic acid
- (c) o-nitrophenol
- (d) Benzenesulphonic acid

[CBSE AIPMT 2014]

23. In the following sequence of reactions,

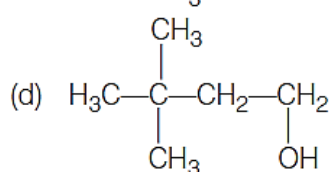
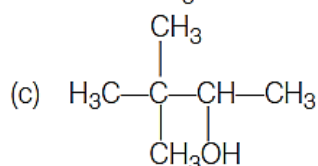
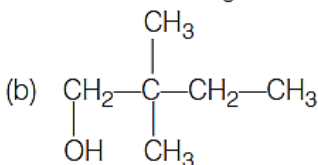
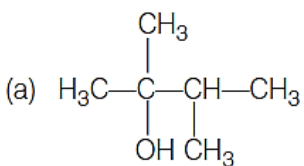
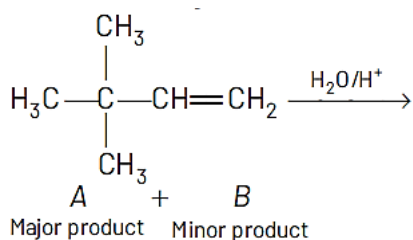


the end product C is

- (a) acetone
- (b) methane
- (c) acetaldehyde
- (d) ethyl alcohol

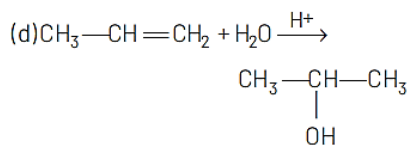
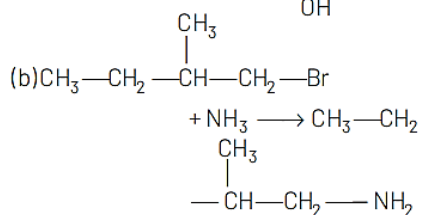
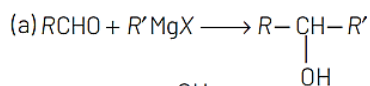
[CBSE AIPMT 2012]

24. In the following reaction,



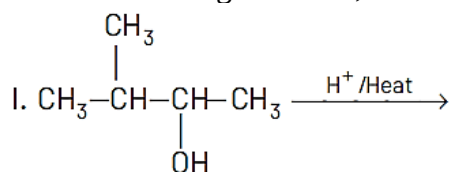
[CBSE AIPMT 2012]

25. Which one is a nucleophilic substitution reaction among the following?

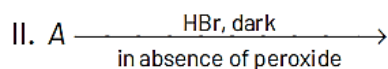


[CBSE AIPMT 2011]

26. In the following reactions,

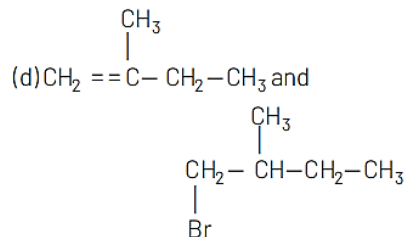
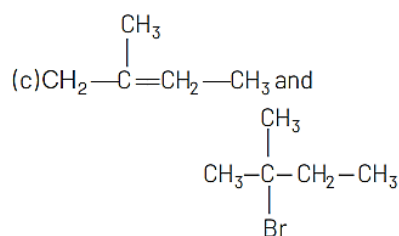
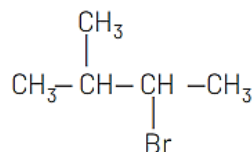
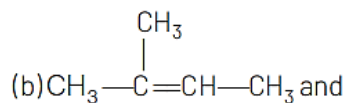
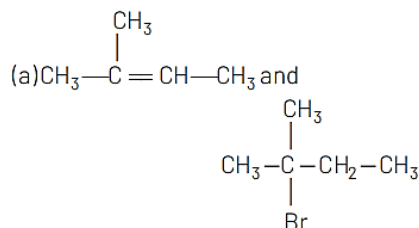


A + B
Major product Minor product



C + D
(Major product) (Major product)

the major products A and C are respectively



[CBSE AIPMT 2011]

27. Given are cyclohexanol (I), acetic acid (II), 2, 4, 6-trinitrophenol (III) and phenol (IV). In these, the order of decreasing acidic character will be

- (a) III > II > IV > I (b) II > III > I > IV
(c) II > III > IV > I (d) III > IV > II > I

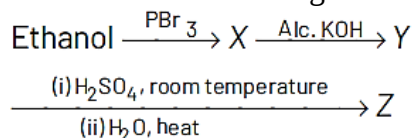
[CBSE AIPMT 2010]

28. Which of the following reactions will not result in the formation of carbon-carbon bonds?

- (a) Reimer-Tiemann reaction
(b) Cannizzaro reaction
(c) Wurtz reaction
(d) Friedel-Crafts's acylation

[CBSE AIPMT 2010]

29. Consider the following reaction,



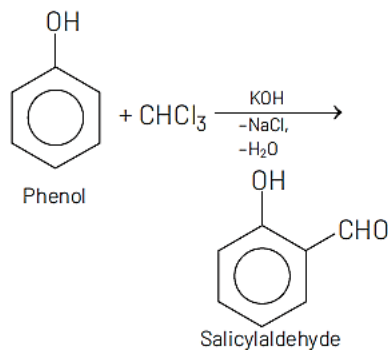
The product Z is

- (a) $\text{CH}_2 = \text{CH}_2$
(b) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$
(c) $\text{CH}_3\text{CH}_2\text{OSO}_3\text{H}$
(d) $\text{CH}_3\text{CH}_2\text{OH}$

[CBSE AIPMT 2009]

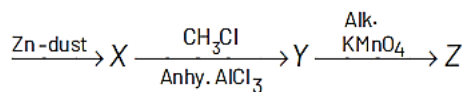
30. $\text{H}_2\text{COH} \cdot \text{CH}_2\text{OH}$ on heating with periodic acid gives

- (a) 2CO_2 (b) 2HCOOH
(c) $\begin{array}{c} \text{CHO} \\ | \\ \text{CHO} \end{array}$ (d) $2 \begin{array}{c} \text{H} \\ \diagup \quad \diagdown \\ \text{C}=\text{O} \\ \diagdown \quad \diagup \\ \text{H} \end{array}$



[CBSE AIPMT 2009]

31. Consider the following reaction, Phenol



The product Z is

- (a) toluene (b) benzaldehyde
(c) benzoic acid (d) benzene

[CBSE AIPMT 2009]

32. Ethylene oxide when treated with Grignard reagent yields

- (a) secondary alcohol
(b) tertiary alcohol
(c) cyclopropyl alcohol
(d) primary alcohol

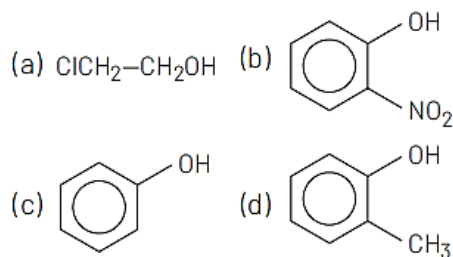
[CBSE AIPMT 2006]

33. The general molecular formula, which represents the homologous series of alkanols is

- (a) $\text{C}_n\text{H}_{2n}\text{O}_2$ (b) $\text{C}_n\text{H}_{2n}\text{O}$
(c) $\text{C}_n\text{H}_{2n+1}\text{O}$ (d) $\text{C}_n\text{H}_{2n+2}\text{O}$

[CBSE AIPMT 2006]

34. Which one of the following compounds is most acidic?



[CBSE AIPMT 2005]

35. The enzyme which hydrolysis triglycerides into fatty acids and glycerol is called

- (a) maltase (b) lipase
(c) zymase (d) pepsin

[CBSE AIPMT 2004]

36. Which of the following will not form a yellow precipitate on heating with an alkaline solution of iodine?

- (a) $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$
(b) $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_3$
(c) CH_3OH
(d) $\text{CH}_3\text{CH}_2\text{OH}$

[CBSE AIPMT 2004]

37. The -OH group of an alcohol or the -COOH group of a carboxylic acid can be replaced by -Cl using

- (a) phosphorus pentachloride
- (b) hypochlorous acid
- (c) chlorine
- (d) hydrochloric acid

[CBSE AIPMT 2004]

38. When phenol is treated with CHCl_3 and NaOH , the product formed is

- (a) benzaldehyde
- (b) salicylaldehyde
- (c) salicylic acid
- (d) benzoic acid

[CBSE AIPMT 2002]

39. n-propyl alcohol and iso-propyl alcohol can be chemically distinguished by which reagent?

- (a) PCl_5
- (b) reduction

- (c) oxidation with potassium dichromate
- (d) ozonolysis

[CBSE AIPMT 2002]

40. In preparation of alkene from alcohol using Al_2O_3 , which is effective factor?

- (a) Porosity of Al_2O_3
- (b) Temperature
- (c) Concentration
- (d) Surface area of Al_2O_3

[CBSE AIPMT 2001]

41. Which of the following is correct?

- (a) Cycloheptane is an aromatic compound
- (b) Diastase is an enzyme
- (c) Acetophenone is an ether
- (d) All of the above

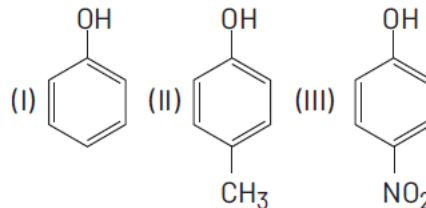
[CBSE AIPMT 2001]

42. Which one of the following is correct?

- (a) Reduction of any aldehyde gives secondary alcohol
- (b) Reaction of vegetable oil with H_2SO_4 gives glycerine
- (c) Alcoholic iodine with NaOH gives iodoform
- (d) Sucrose on reaction with NaCl gives invert sugar

[CBSE AIPMT 2001]

43. The correct acidic order of following is



- (a) $\text{I} > \text{II} > \text{III}$
- (b) $\text{III} > \text{I} > \text{II}$
- (c) $\text{II} > \text{III} > \text{I}$
- (d) $\text{I} > \text{III} > \text{II}$

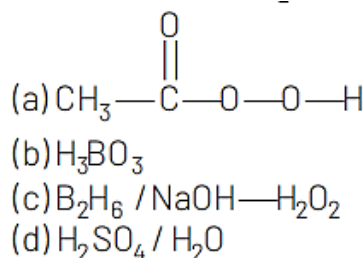
[CBSE AIPMT 2001]

44. The ionisation constant of phenol is higher than that of ethanol because

- (a) phenoxide ion is bulkier than ethoxide
- (b) phenoxide ion is stronger base than ethoxide
- (c) phenoxide ion is stabilised through delocalisation
- (d) phenoxide ion is less stable than ethoxide

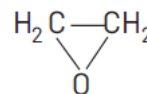
[CBSE AIPMT 2000]

45. Propan-1-ol may be prepared by reaction of propene with

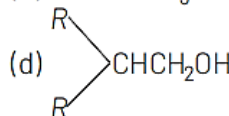


[CBSE AIPMT 2000]

46. Reaction of



with RMgX leads to formation of

- (a) RCHOHR
- (b) RCHOHCH_3
- (c) $\text{RCH}_2\text{CH}_2\text{OH}$
- (d) 

[CBSE AIPMT 1998]

47. The boiling point of p-nitrophenol is higher than that of o-nitrophenol because

- (a) NO_2 group at p-position behaves in a

- different way from that at o-position
 (b) intramolecular hydrogen bonding exists in *p*-nitrophenol
 (c) there is intermolecular hydrogen bonding in *p*-nitrophenol
 (d) *p*-nitrophenol has a higher molecular weight than *o*-nitrophenol

[CBSE AIPMT 1994]

48. What is formed when a primary alcohol undergoes catalytic dehydrogenation?

- (a) Aldehyde (b) Ketone
 (c) Alkene (d) Acid

[CBSE AIPMT 1993]

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

- (a) Primary alcohol (b) Secondary alcohol
 (c) Tertiary alcohol (d) All of these

[CBSE AIPMT 1993]

50. Increasing order of acidic strength among *p*-methoxy phenol (I), *p*-methyl phenol (II) and *p*-nitrophenol (III) is

- (a) III, I, II (b) II, I, II
 (c) III, II, I (d) II, II, III

[CBSE AIPMT 1992]

51. When phenol is treated with excess of bromine water, it gives

- (a) *m*-bromophenol
 (b) *o* - and *p*-bromophenols
 (c) 2,4-dibromophenol
 (d) 2,4,6-tribromophenol

[CBSE AIPMT 1992]

52. Methanol is industrially prepared by

- (a) oxidation of CH_4 by steam at 900°C
 (b) reduction of HCHO^2 using LiAlH_4
 (c) reaction of HCHO with a solution of NaOH
 (d) reduction of CO using H_2 and $\text{ZnO} - \text{Cr}_2\text{O}_3$

[CBSE AIPMT 1992]

53. How many isomers of $\text{C}_5\text{H}_{11}\text{OH}$ will be primary alcohols?

- (a) 5 (b) 4
 (c) 2 (d) 3

[CBSE AIPMT 1992]

54. Propene, $\text{CH}_3\text{CH}=\text{CH}_2$ can be converted into 1-propanol by oxidation.

Indicate which set of reagents amongst the following is ideal to affect the above conversion?

- (a) KMnO_4 (alkaline)
 (b) Osmium tetroxide ($\text{OsO}_4/\text{CH}_2\text{Cl}_2$)
 (c) B_2H_6 and alk H_2O_2
 (d) O_3/Zn

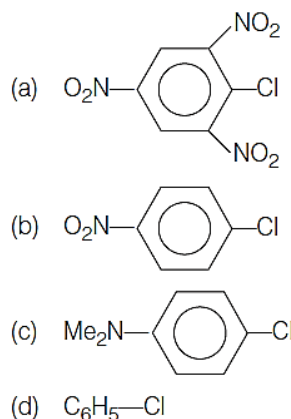
[CBSE AIPMT 1989]

55. The compound which reacts fastest with Lucas reagent is (at room temperature)

- (a) butan-1-ol
 (b) butan-2-ol
 (c) 2-methyl propan-1-ol
 (d) 2-methyl propan-2-ol

[CBSE AIPMT 1989]

56. Which chloro derivative of benzene among the following would undergo hydrolysis most readily with aq. NaOH to furnish the corresponding hydroxy derivative?



[CBSE AIPMT 1989]

57. When phenol is heated with CHCl_3 and alcoholic KOH , salicylaldehyde is produced. This reaction is known as

- (a) Rosenmund's reaction
 (b) Reimer-Tiemann reaction
 (c) Friedel-Craft's reaction
 (d) Sommelet reaction

[CBSE AIPMT 1989, 88]

58. Lucas reagent is

- (a) conc. HCl and anhy. ZnCl_2
 (b) conc. HNO_3 and anhy. ZnCl_2
 (c) conc. HCl and hydrous ZnCl_2
 (d) conc. HNO_3 and hydrous ZnCl_2

[CBSE AIPMT 1988]

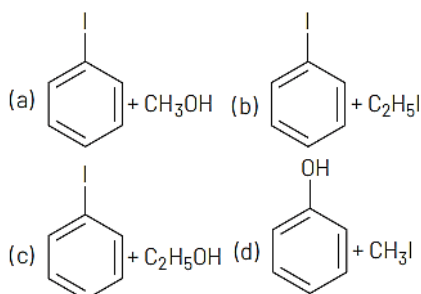
2. Ethers

1. The compound which shows metamerism is

- (a) C_5H_{12} (b) C_3H_8O
(c) C_3H_6O (d) $C_4H_{10}O$

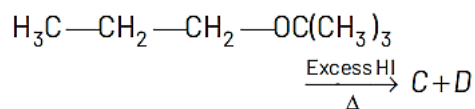
[NEET 2021]

2. Anisole on cleavage with HI gives:



[NEET (Sep.) 2020]

3. The major products C and D formed in the following reactions respectively are



- (a) $H_3C-CH_2-CH_2-I$ and $I-C(CH_3)_3$
(b) $H_3C-CH_2-CH_2-OH$ and $I-C(CH_3)_3$
(c) $H_3C-CH_2-CH_2-I$ and $HO-C(CH_3)_3$
(d) $H_3C-CH_2-CH_2-OH$ and $HO-C(CH_3)_3$

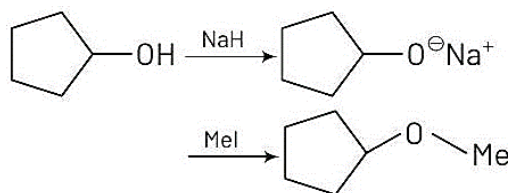
[NEET (Odisha) 2019]

4. The heating of phenyl-methyl ethers with HI produces.

- (a) ethyl chlorides (b) iodobenzene
(c) phenol (d) benzene

[NEET 2017]

5. The reaction

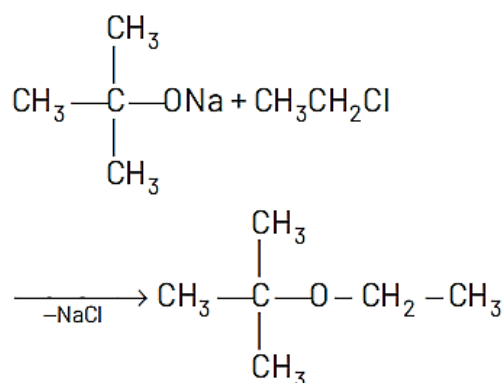


can be classified as

- (a) Alcohol formation reaction
(b) Dehydration reaction
(c) Williamson alcohol synthesis reaction
(d) Williamson ether synthesis reaction

[NEET 2016, Phase I]

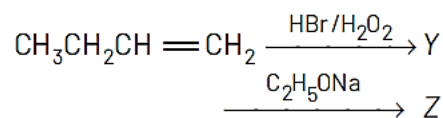
6. The reaction,



- (a) Williamson synthesis
(b) Williamson continuous etherification process
(c) Etard reaction
(d) Gatterman-Koch reaction

[CBSE AIPMT 2015]

7. Identity Z in the sequence of reactions,



- (a) $\text{CH}_3-(\text{CH}_2)_3-\text{O}-\text{CH}_2\text{CH}_3$
(b) $(\text{CH}_3)_2\text{CH}_2-\text{O}-\text{CH}_2\text{CH}_3$
(c) $\text{CH}_3(\text{CH}_2)_4-\text{O}-\text{CH}_3$
(d) $\text{CH}_3\text{CH}_2-\text{CH}(\text{CH}_3)-\text{O}-\text{CH}_2\text{CH}_3$

[CBSE AIPMT 2014]

8. Among the following sets of reactants which one produces anisole?

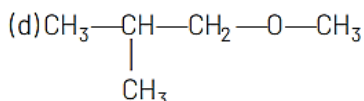
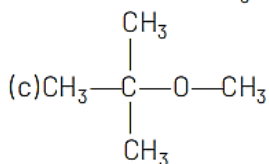
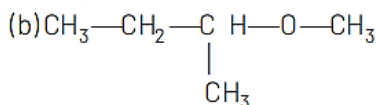
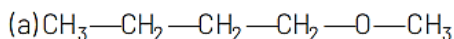
- (a) CH_3CHO , RMgX
(b) $\text{C}_6\text{H}_5\text{OH}$, NaOH , CH_3I



- (c) C_6H_5OH , neutral $FeCl_3$
 (d) $C_6H_5 - CH_3$, CH_3COCl , $AlCl_3$

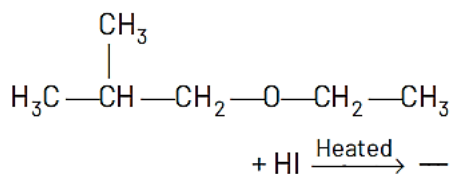
[CBSE AIPMT 2014]

9. Among the following ethers which one will produce methyl alcohol on treatment with hot concentrated HI?

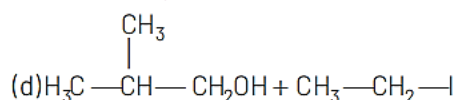
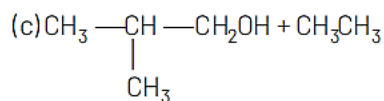
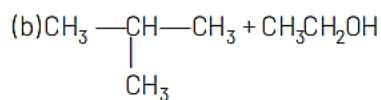
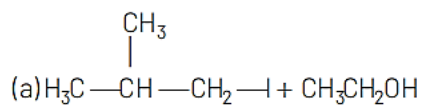


[CBSE AIPMT 2013]

10. The reaction

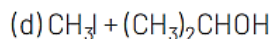
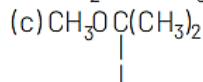
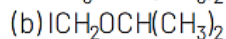
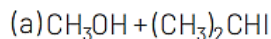


Which of the following compounds will be formed?



[CBSE AIPMT 2007]

11. The major organic product in the reaction, $CH_3OCH(CH_3)_2 + HI$ Product, is/are



[CBSE AIPMT 2006]

12. 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) H-bonding in ethanol
 (b) H-bonding in dimethyl ether
 (c) $-CH_3$ group in ethanol
 (d) $-CH_3$ group in dimethyl ether

[CBSE AIPMT 1993]

13. Which one is formed when sodium phenoxide is heated with ethyl iodide?

- (a) Phenetole (b) Ethyl phenyl alcohol
 (c) Phenol (d) None of the above

[CBSE AIPMT 1988]



ANSWERS

Topic : (1) Alcohols and Phenols

1. (a)	2. (d)	3.(d)	4.(c)	5.(d)	6.(c)	7.(d)	8.(a)	9.(a)	10.(a)
11.(a)	12.(c)	13.(a)	14.(c)	15.(d)	16.(a)	17.(d)	18.(d)	19.(d)	20.(a)
21.(b)	22.(c)	23.(d)	24.(a)	25.(b)	26.(a)	27.(a)	28.(b)	29.(d)	30.(d)
31.(c)	32.(d)	33.(d)	34.(c)	35.(b)	36.(c)	37.(a)	38.(b)	39.(c)	40.(b)
41.(b)	42.(c)	43.(b)	44.(c)	45.(c)	46.(c)	47.(c)	48.(a)	49.(b)	50.(d)
51.(d)	52.(d)	53.(b)	54.(c)	55.(d)	56.(a)	57.(b)	58.(a)		

Topic : (2) Ethers

1. (d)	2. (d)	3.(a)	4.(c)	5.(d)	6.(a)	7.(a)	8.(b)	9.(c)	10.(d)
11.(d)	12.(a)	13.(a)							

