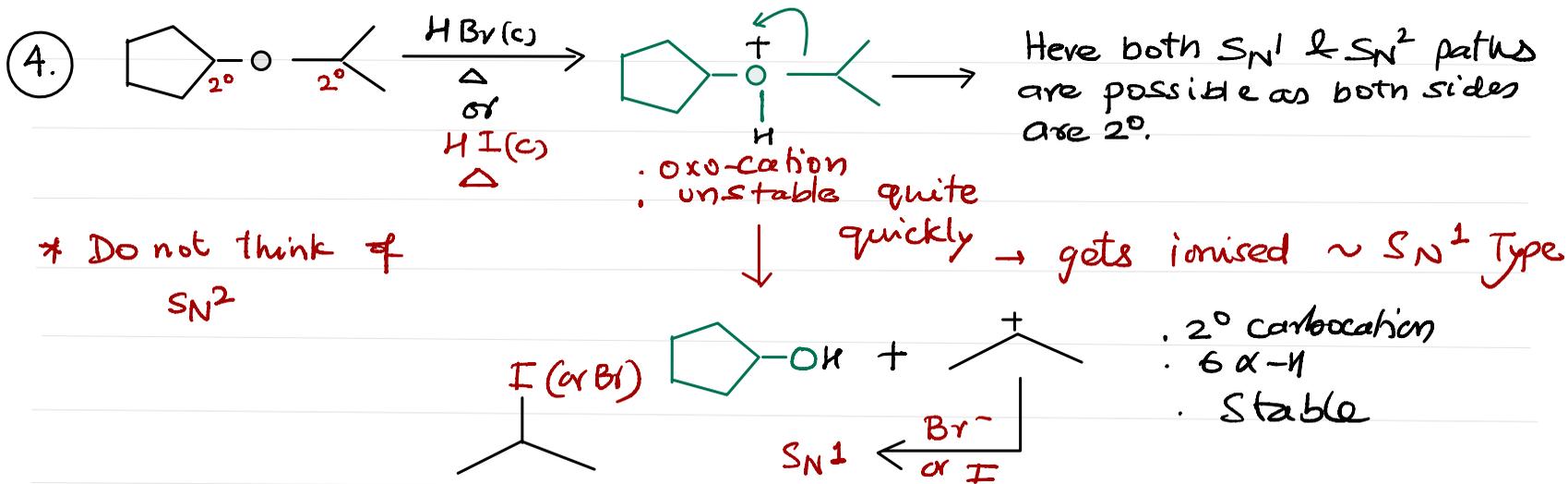
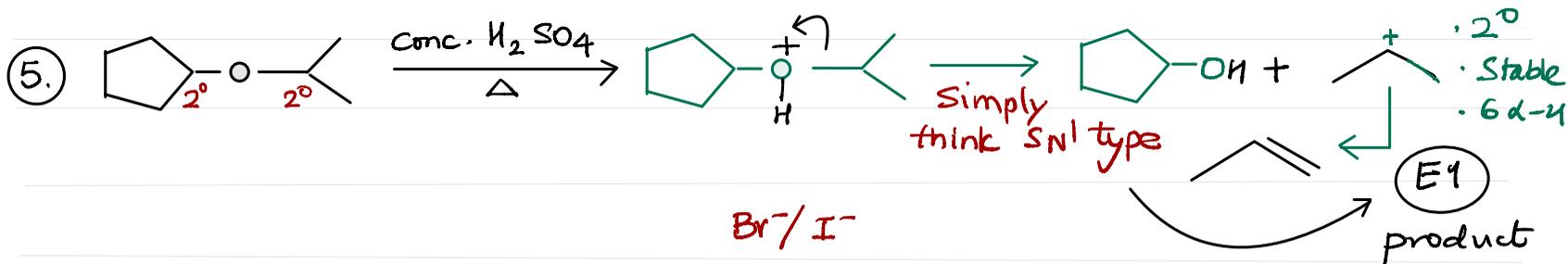


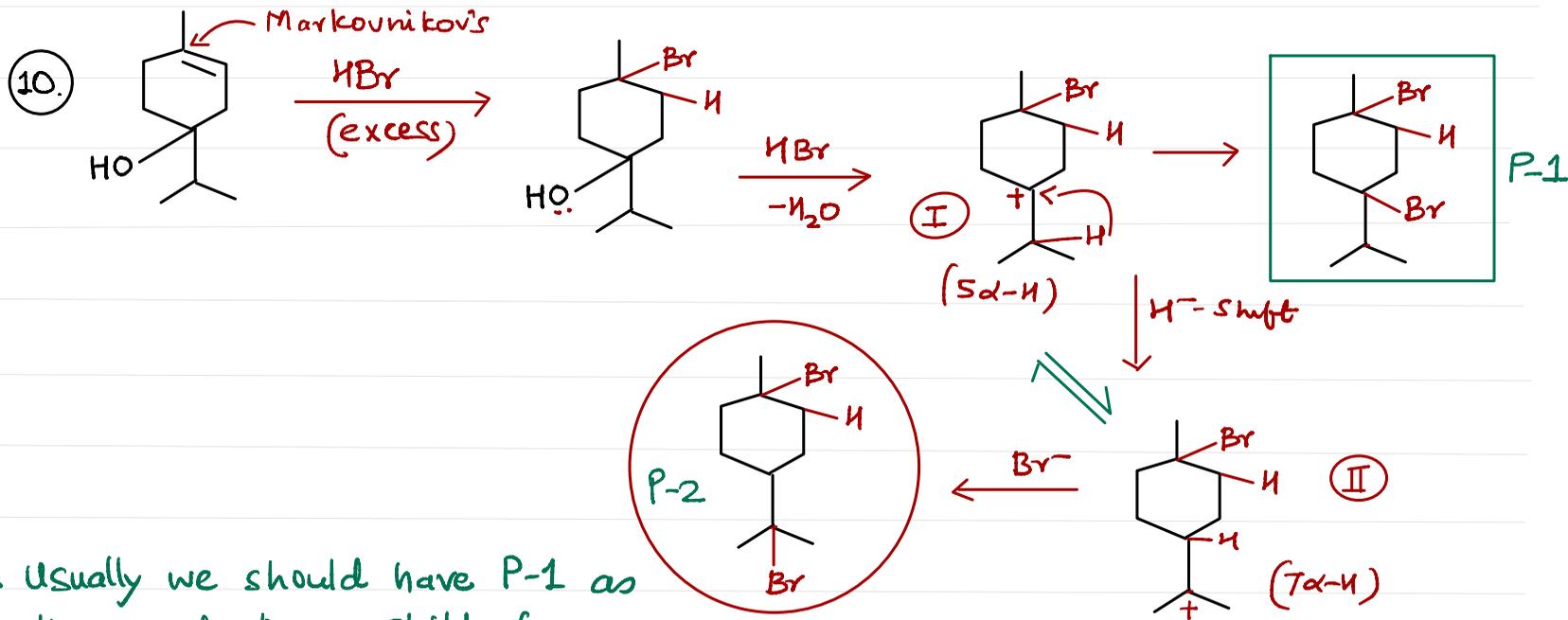
**Solutions to HWS-6  
Home Worksheet-7  
Class Test-2**



Alcohol(s), Phenol(s), Ether(s) and Glycol(s)



Alcohol(s), Phenol(s), Ether(s) and Glycol(s)

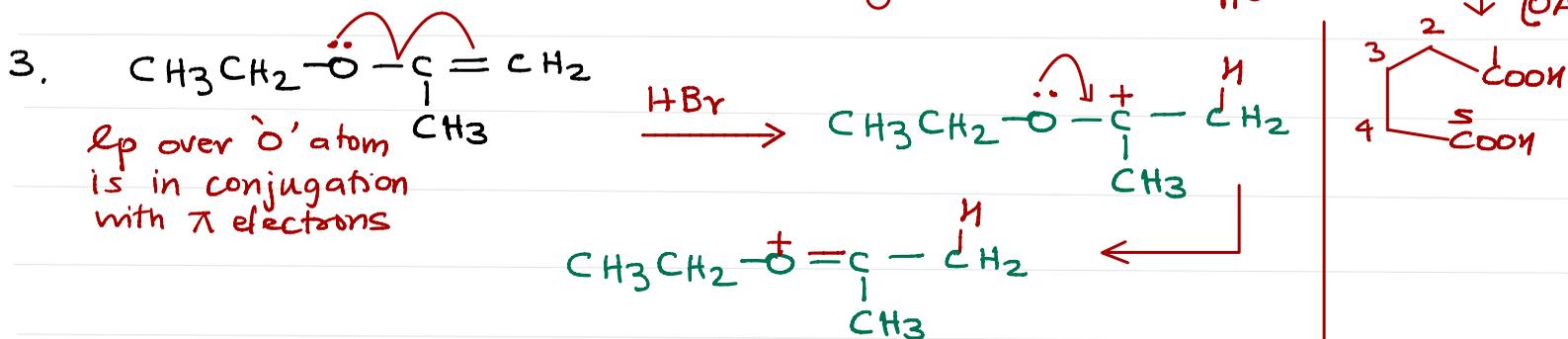
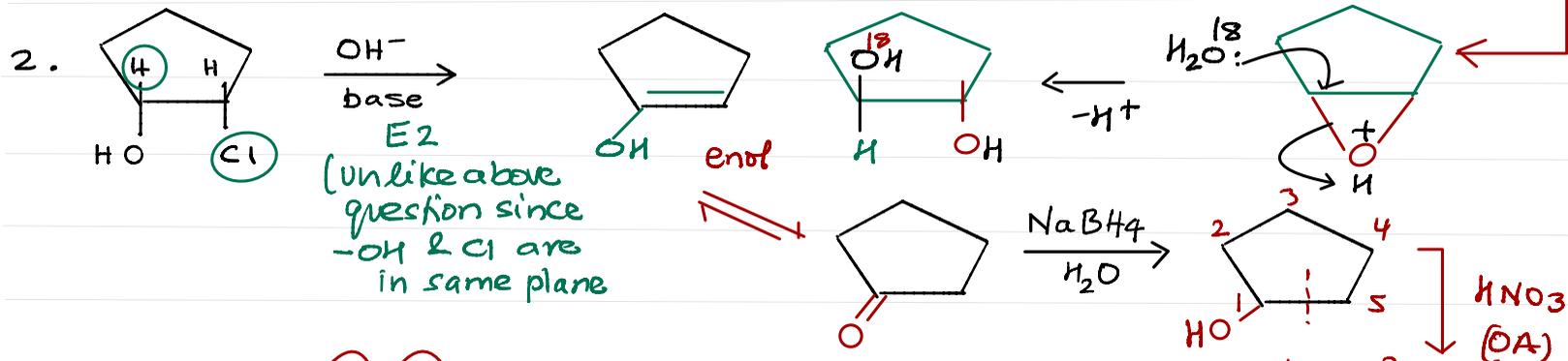
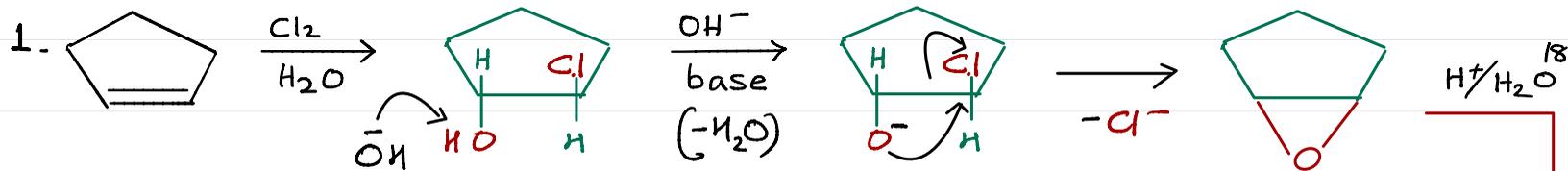


\* Usually we should have P-1 as the product as shift from  $3^\circ \rightarrow 3^\circ$  is generally not visualised as I & II are in equilibrium.

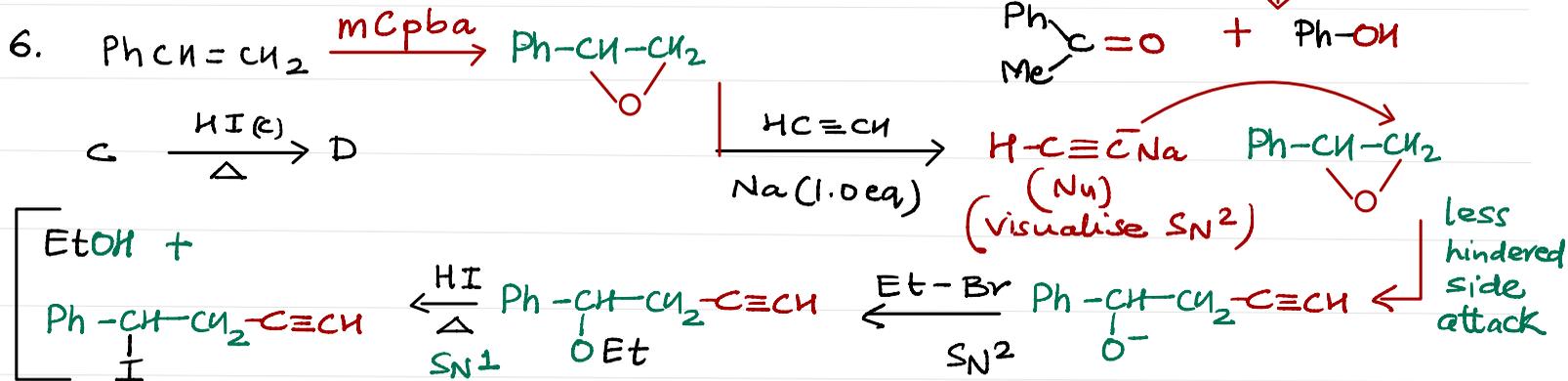
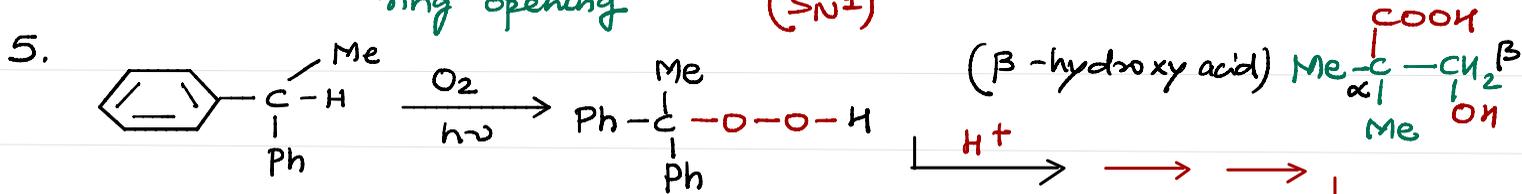
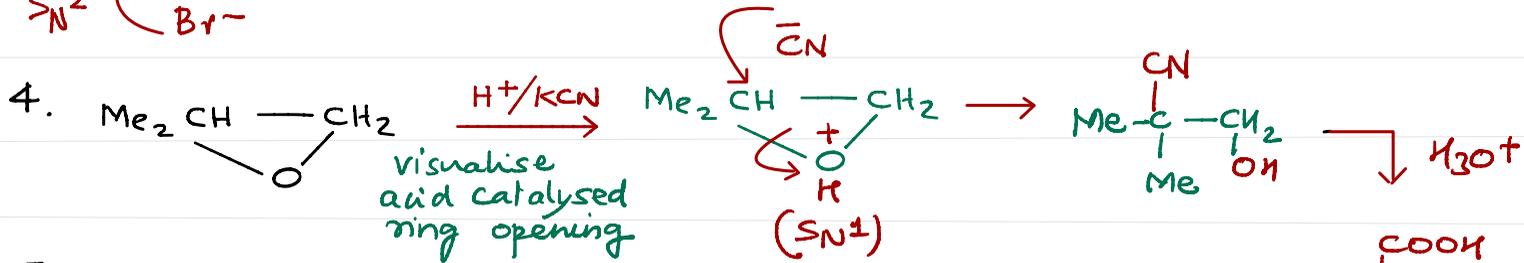
\* But if there is a choice in answer for P-2; we can then think about it.

• I and II are in equilibrium

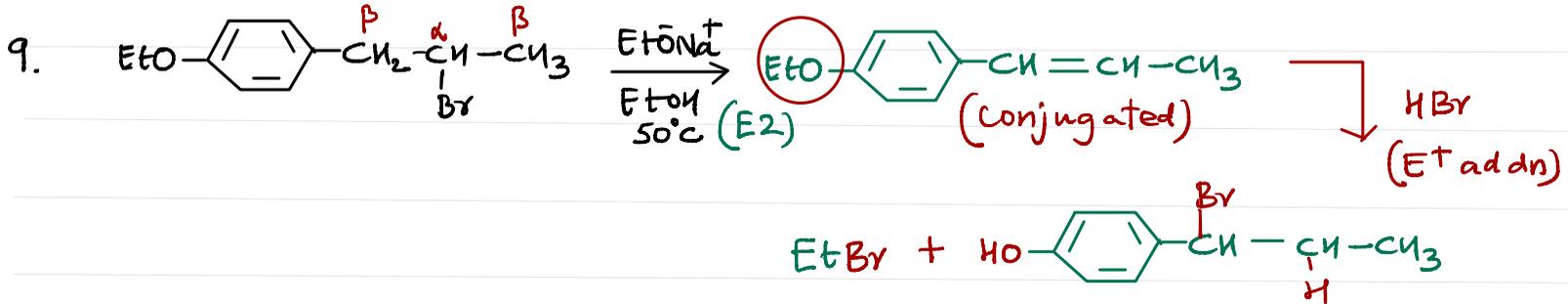
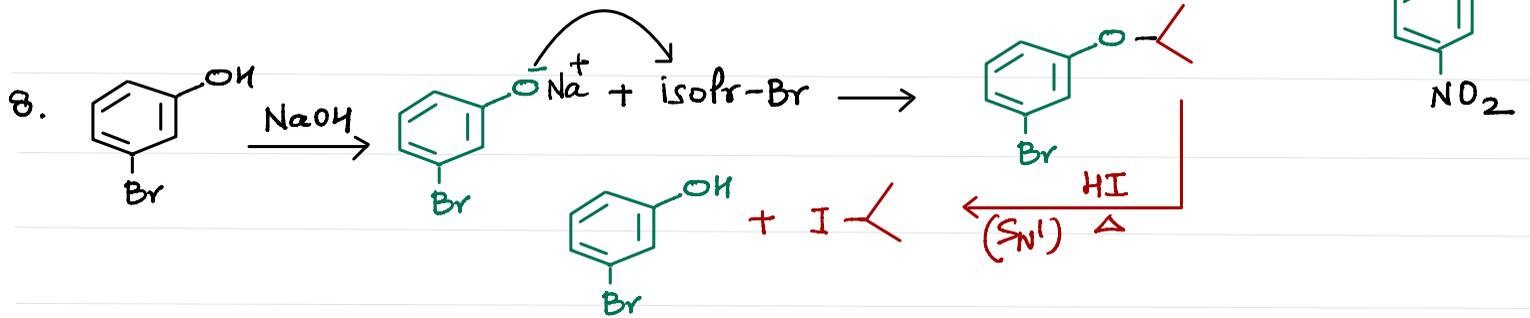
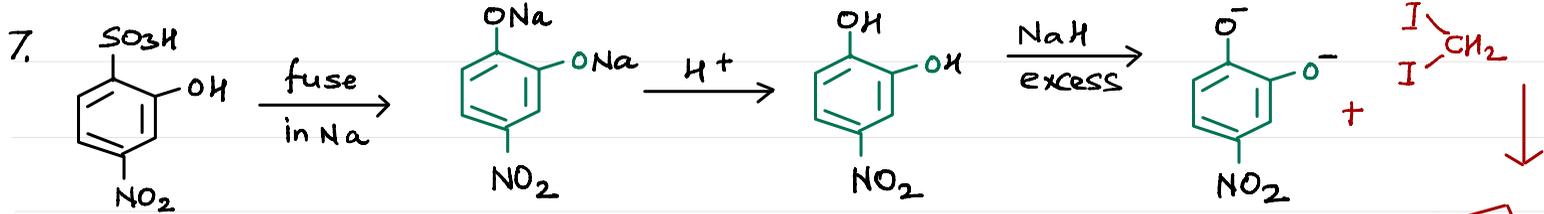
Alcohol(s), Phenol(s), Ether(s) and Glycol(s)



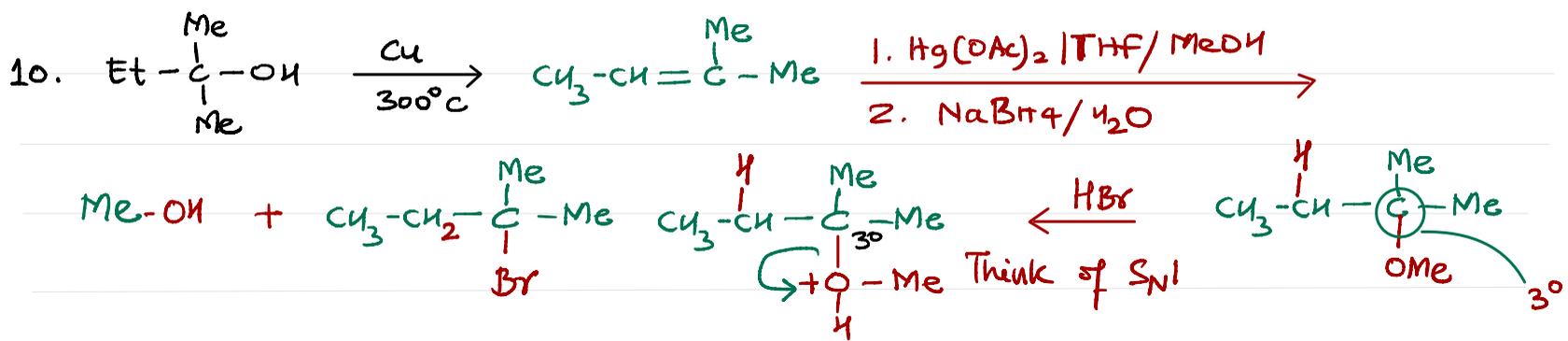
Alcohol(s), Phenol(s), Ether(s) and Glycol(s)



Alcohol(s), Phenol(s), Ether(s) and Glycol(s)

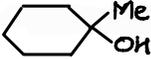
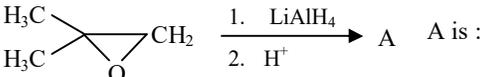
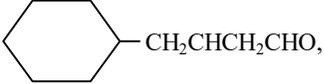
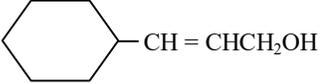
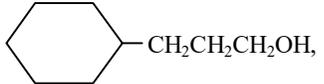
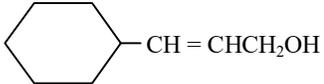
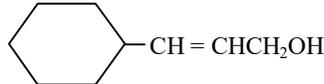
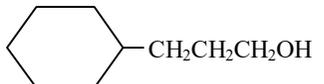


Alcohol(s), Phenol(s), Ether(s) and Glycol(s)



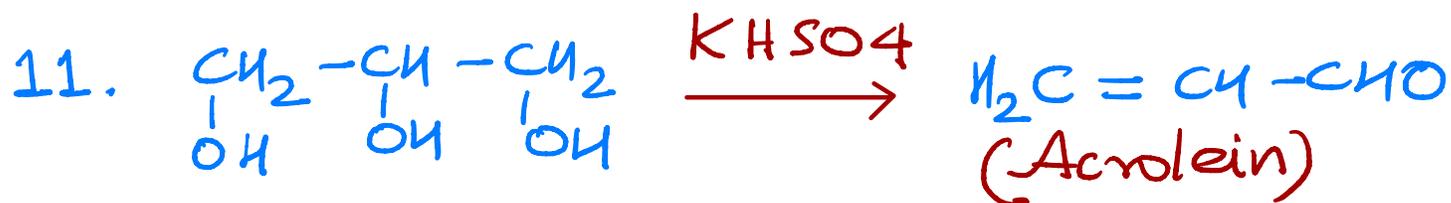
Alcohol(s), Phenol(s), Ether(s) and Glycol(s)



13. Which of the following alcohol(s) will produce turbidity instantly with Lucas reagent ?  
**I.** Ethanol      **II.**       **III.** tert-Butyl alcohol      **IV.** Glycerol  
 The correct option is :  
**(A)** I      **(B)** II, III      **(C)** I, II      **(D)** III
14. Fermentation of sugar with yeast forms :  
**(A)** Methanol      **(B)** Ethanol      **(C)** Ethanal      **(D)** Acetic acid
15. Which gives 1-Propanol from Propene ?  
**(A)** Hydroboration      **(B)** Oxymercuration      **(C)** Demercuration      **(D)** None of these
16. Alcohols are soluble in water due to the formation of  
**(A)** Covalent bonds      **(B)** Ionic bonds  
**(C)** Hydrogen bonds with water      **(D)** None of these
17.  A is :  
**(A)** (CH<sub>3</sub>)<sub>2</sub>CHCH<sub>2</sub>OH      **(B)** CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH  
**(C)** (CH<sub>3</sub>)<sub>3</sub>C-OH      **(D)** No reaction
18.  $\text{CH}_2 = \underset{\text{OH}}{\text{CH}}\text{CHCH}_2\text{CH}_2\text{OH} \xrightarrow{\text{MnO}_2} \text{A}$ . [Hint: MnO<sub>2</sub> oxidises only unsaturated alcohols]  
 A is :  
**(A)**  $\text{CH}_2 = \underset{\text{O}}{\text{C}}\text{CH}_2\text{CH}_2\text{OH}$       **(B)**  $\text{CH}_2 = \underset{\text{OH}}{\text{C}}\text{HCH}_2\text{CHO}$   
**(C)**  $\text{CH}_2 = \underset{\text{O}}{\text{C}}\text{CH}_2\text{CHO}$       **(D)**  $\text{CH}_2 = \underset{\text{O}}{\text{C}}\text{CH}_2\text{COOH}$
19.  $\text{B} \xleftarrow{\text{LiAlH}_4} \text{Cyclohexane ring}-\text{CH}=\text{CHCHO} \xrightarrow{\text{H}_2/\text{Pt}} \text{A}$ ,  
 A and B are :  
**(A)** ,   
**(B)** ,   
**(C)**  in both cases  
**(D)**  in both cases
20.  $\text{CH}_3\text{CH}=\text{CH}_2 \xrightarrow[125^\circ\text{C, Pressure}]{\text{CO, H}_2, [\text{CoH}(\text{CO})_4]}$   $\xrightarrow[\text{Cu-Zn}]{\text{H}_2}$  Product  
 This represents oxo method of alcohol synthesis. Product can be :  
**(A)** CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH      **(B)** (CH<sub>3</sub>)<sub>2</sub>CHCH<sub>2</sub>OH  
**(C)** Both are true      **(D)** None of these

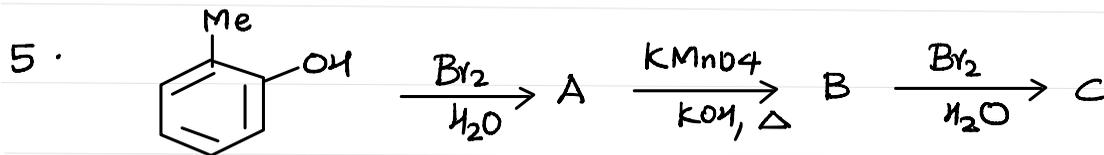
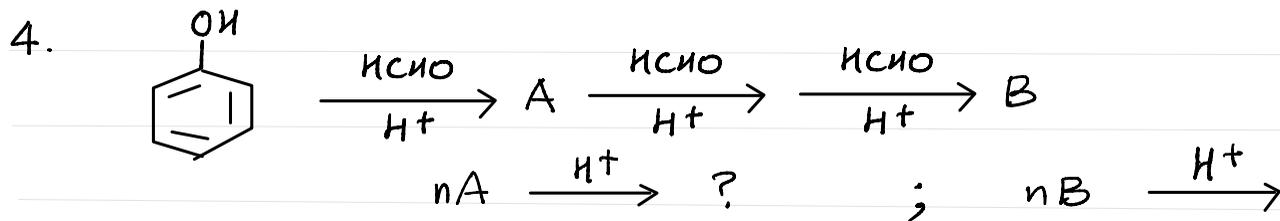
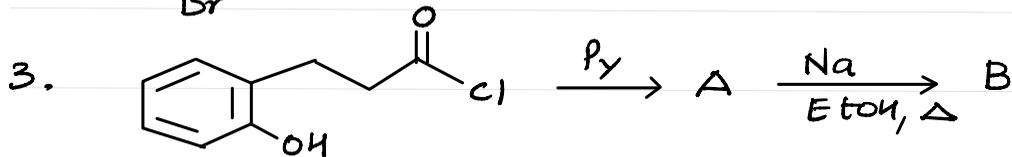
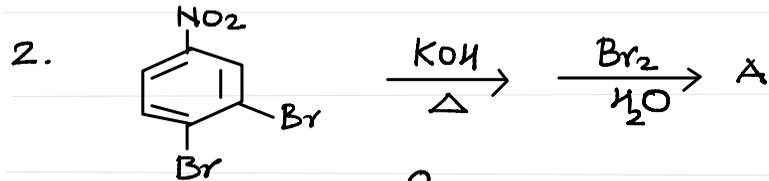
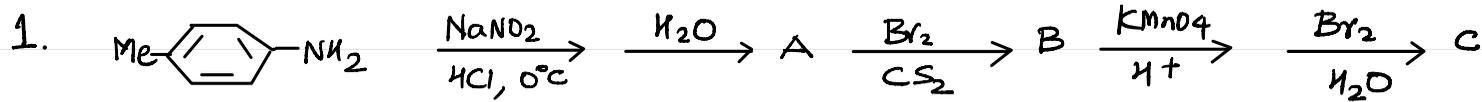
Answers to Class Test - 1 | Alcohols & Ethers

1	2	3	4	5	6	7	8	9	10
C	C	D	A	B	C	C	D	D	B
11	12	13	14	15	16	17	18	19	20
D	A	B	B	D	C	C	A	B	C



12. (A)  $\alpha, \beta$ -unsaturated carbonyl compounds are stable due to resonance

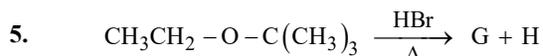
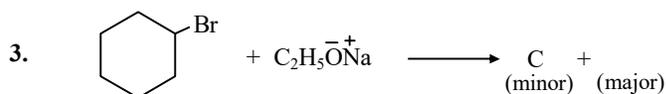
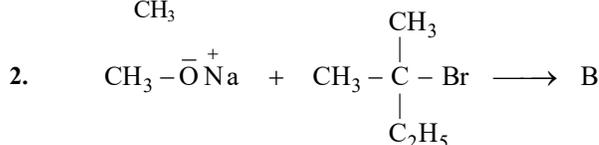
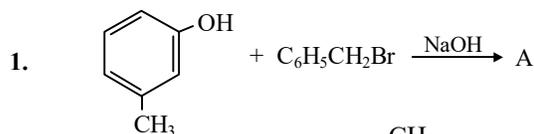
17.  $\text{LiAlH}_4 \rightarrow \text{H}^-$  makes  $\text{S}_\text{N}2$  attack at less hindered side to give 3° al.



Alcohol(s), Phenol(s), Ether(s) and Glycol(s)

75 - 90 min

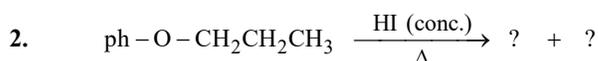
I. Identify A, B, . . . . .



II. Do the following conversions.

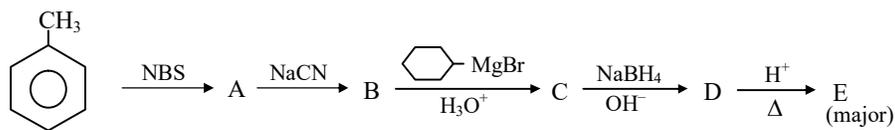
- 1, 3-butadiene to cyclohexane oxide in not more than 3 steps.
- Isopropyl chloride to 2-methyl oxirane.
- Cyclopentyl bromide to methoxy cyclopentane.
- Cyclohexene to cis-1, 2-dimethoxy cyclohexane.
- Isopropyl alcohol to 2, 3-dimethyl butan-2, 3-diol

III. Write the products of the following reactions and propose a mechanism to support your answer.

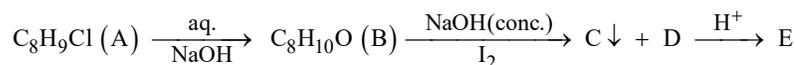


IV. An organic compound ( $\text{C}_4\text{H}_{10}\text{O}_3$ ) shows properties of both ethers and alcohols. When treated with excess of HBr, it yields 1, 2-dibromo ethane. Give the structure of compound.

V. Identify A, B, C. . . . .

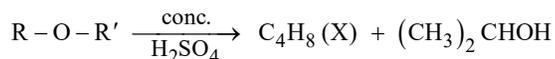


VI. Identify A, B, C. . . . .

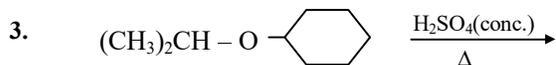
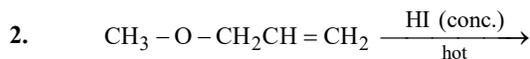


*E is soluble in hot water and insoluble in cold water.*

VII. Identify R, R' and X.



VIII. Give the products in each case.



IX. An organic compound X, on reaction with  $\text{CHCl}_3$  and  $\text{KOH}$  gives a mixture of Y and Z; Both of Y and Z give same compound T when distilled with zinc. T on oxidation gives S,  $\text{C}_7\text{H}_6\text{O}_2$ . The sodium salt of S on heating with soda-lime gives P, which can also be obtained by distilling X with zinc. Identify all the unknown compounds (X, Y, . . .)

X. An organic compound (A),  $\text{C}_5\text{H}_{12}\text{O}$  on reaction with  $\text{PCl}_5$  forms alkyl chlorides B and C. Both B and C on reaction with aq.  $\text{KOH}$  form D and E. Both D and E give positive iodoform test. Identify the compounds A to E.

Do this question after next class.

Thank  
you!

