

ALCOHOL & ETHER

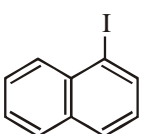
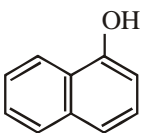
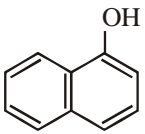
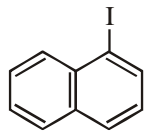
- Ceric ammonium nitrate and CHCl_3 / alc. KOH are used for the identification of functional groups present in _____ and _____ respectively.
 - Alcohol, phenol
 - Amine, alcohol
 - Alcohol, amine
 - Amine, phenol
- Given below are two statements :

Statement-I : 2-methylbutane on oxidation with KMnO_4 gives 2-methylbutan-2-ol.

Statement-II : n-alkanes can be easily oxidised to corresponding alcohol with KMnO_4 .

Choose the correct option :

 - Both statement I and statement II are correct
 - Both statement I and statement II are incorrect
 - Statement I is correct but Statement II is incorrect
 - Statement I is incorrect but Statement II is correct
- _____ grams of 3-Hydroxy propanal (MW=74) must be dehydrated to produce 7.8 g of acrolein (MW = 56) ($\text{C}_3\text{H}_4\text{O}$) if the percentage yield is 64. (Round off to the Nearest Integer).
[Given : Atomic masses : C : 12.0 u, H : 1.0 u, O : 16.0 u]
- Main Products formed during a reaction of 1-methoxy naphthalene with hydroiodic acid are:

-  and CH_3OH
-  and CH_3I
-  and CH_3OH
-  and CH_3I

- Given below are two statements :

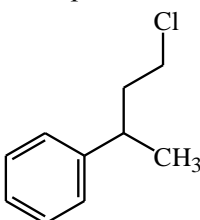
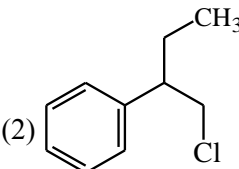
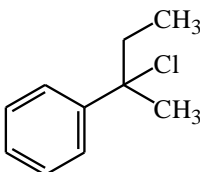
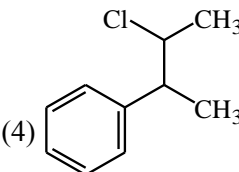
Statement I : $\text{C}_2\text{H}_5\text{OH}$ and AgCN both can generate nucleophile.

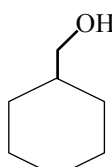
Statement II : KCN and AgCN both will generate nitrile nucleophile with all reaction conditions.

Choose the most appropriate option :

 - Statement I is true but statement II is false
 - Both statement I and statement II are true
 - Statement I is false but statement II is true
 - Both statement I and statement II are false
- Reaction of Grignard reagent, $\text{C}_2\text{H}_5\text{MgBr}$ with $\text{C}_8\text{H}_8\text{O}$ followed by hydrolysis gives compound "A" which reacts instantly with Lucas reagent to give compound B, $\text{C}_{10}\text{H}_{13}\text{Cl}$.

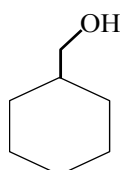
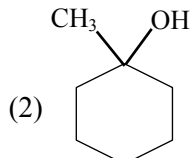
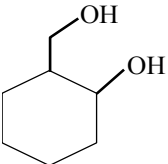
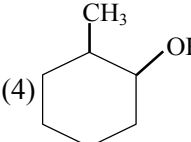
The Compound B is :

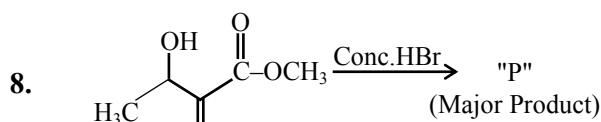
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 $\xrightarrow[120^\circ\text{C}]{\text{H}_3\text{PO}_4}$ A
Major Product

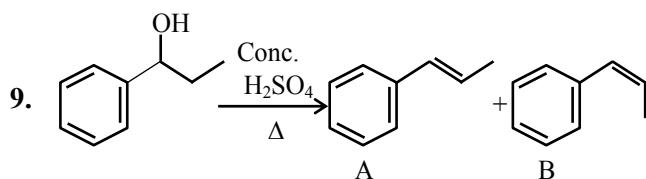
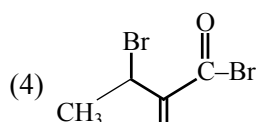
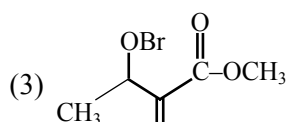
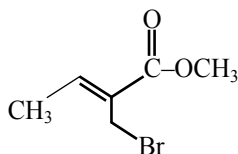
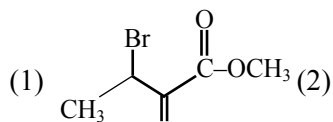
 $\xrightarrow[\text{H}_2\text{O}]{\text{H}_2\text{O}_2/\text{OH}^-}$ P
Major Product

Consider the above reaction and identify the Product P :

- 
- 
- 
- 



Consider the above reaction, the major product "P" formed is :-



consider the above reaction, and choose the correct statement :

- (1) The reaction is not possible in acidic medium
- (2) Both compounds **A** and **B** are formed equally
- (3) Compound **A** will be the major product
- (4) Compound **B** will be the major product

10. Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

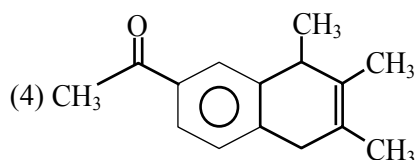
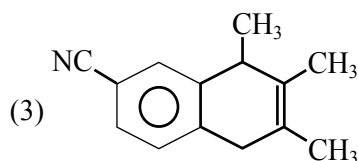
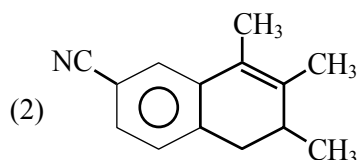
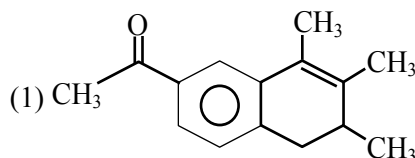
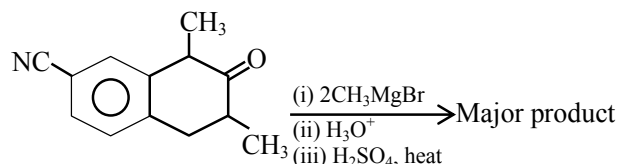
Assertion (A): Synthesis of ethyl phenyl ether may be achieved by Williamson synthesis.

Reason (R): Reaction of bromobenzene with sodium ethoxide yields ethyl phenyl ether.

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

- (1) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**
- (2) **(A)** is correct but **(R)** is not correct
- (3) **(A)** is not correct but **(R)** is correct
- (4) Both **(A)** and **(R)** are correct but **(R)** is NOT the correct explanation of **(A)**

11. Which one of the following is the major product of the given reaction?



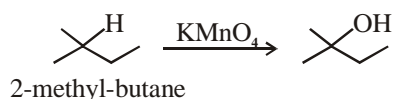
SOLUTION

1. Official Ans. by NTA (3)

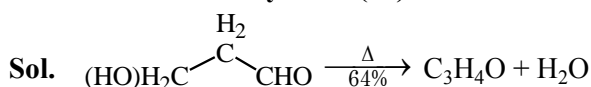
Sol. Ceric ammonium nitrate for alcohol and CHCl_3/KOH is carbyl amine test for primary amines

2. Official Ans. by NTA (3)

Sol. Alkane are very less reactive, tertiary hydrogen can oxidise to alcohol with KMnO_4 .



3. Official Ans. by NTA (16)

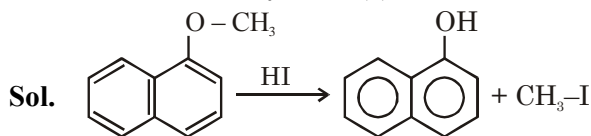


$$\frac{x}{74} \text{ mol} \qquad \frac{x}{74} \times 0.64 = \frac{7.8}{56}$$

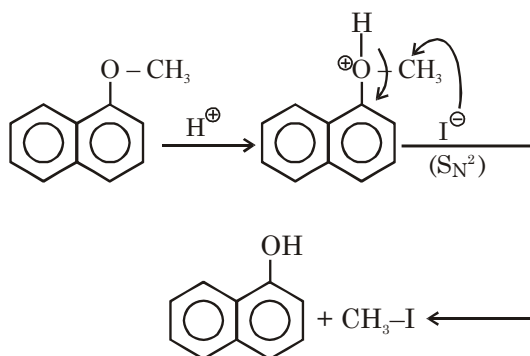
$$x = 16.10$$

$$\approx 16.00$$

4. Official Ans. by NTA (2)



Mechanism

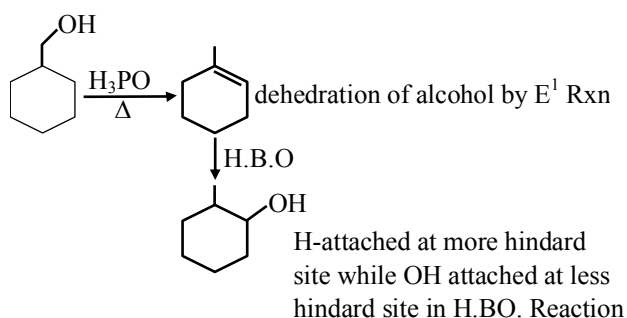


5. Official Ans. by NTA (1)

6. Official Ans. by NTA (3)

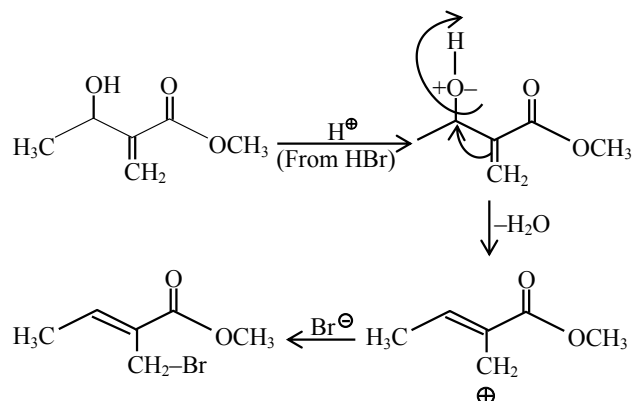
7. Official Ans. by NTA (4)

Sol.



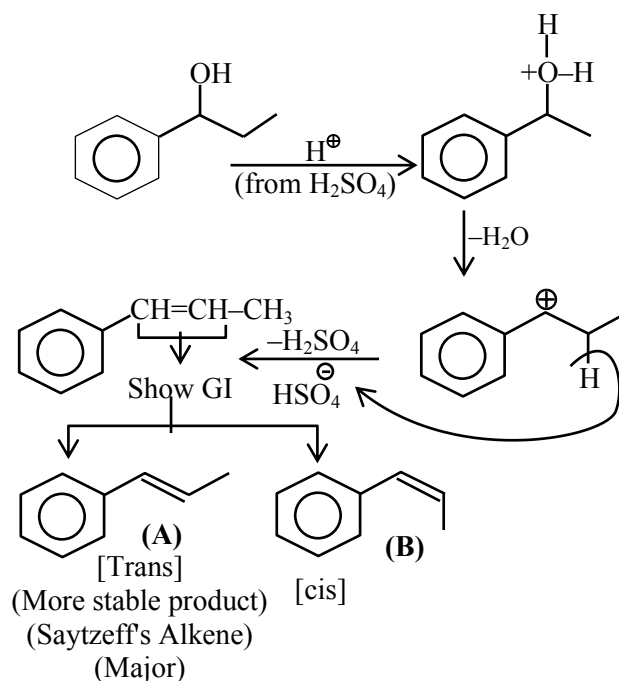
8. Official Ans. by NTA (2)

Sol.

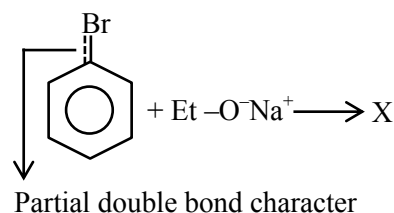
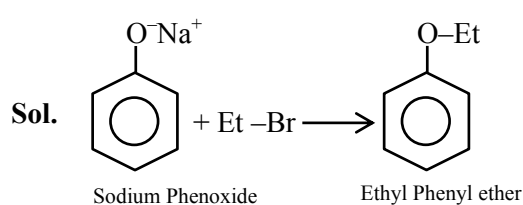


9. Official Ans. by NTA (3)

Sol.



10. Official Ans. by NTA (2)



11. Official Ans. by NTA (1)

Sol.

