

ALCOHOLS, PHENOLS AND ETHERS

CHAPTER-11

TEST-A

SOLVED

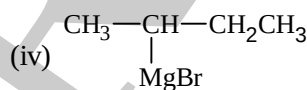
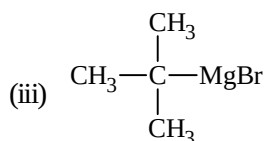
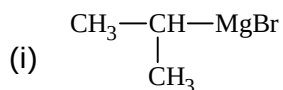
Time: 1 hr.

Max. Marks: 30

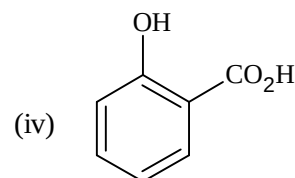
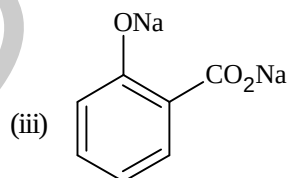
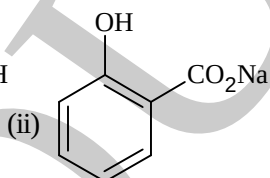
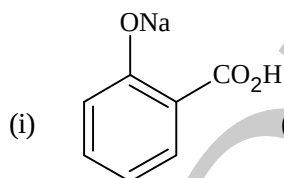
SECTION-A

Tick the correct option:

1. How many isomeric alcohols with molecular formula $C_5H_{12}O$ are secondary alcohols?
 (i) 1 (ii) 2 (iii) 3 (iv) 4 [1]
2. The Grignard reagent (A) on reaction with methanal gives an isobutyl alcohol. The Grignard reagent (A) is [1]



3. The intermediate in the Kolbe reaction is [1]

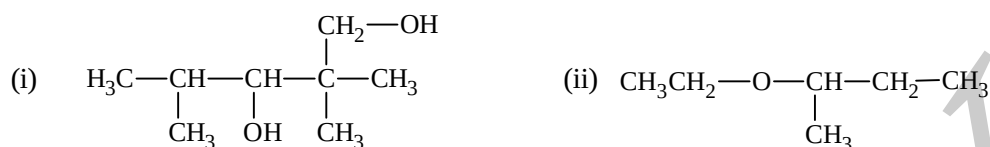


Assertion-Reason type Questions:

- (i) If assertion and reason both are correct and reason is the correct explanation of assertion.
 (ii) If assertion and reason both are correct and reason is not the correct explanation of assertion.
 (iii) If assertion is correct and reason is wrong.
 (iv) If assertion is wrong and reason is correct.
4. Assertion: Like bromination of benzene, bromination of phenol requires the presence of Lewis acid, FeBr_3 . [1]
 Reason: Lewis acid polarises the bromine molecule.
5. Assertion: 2-Methyl propan-2-ol is completely miscible in water while butanol is immiscible in water. [1]
 Reason: Both 2-methyl propan-2-ol and butanol have equal volatility.

One word /One Sentence type Questions.

6. Give IUPAC names of the following compounds: [1]



7. How many sigma bonds are present in 4-methyl phenol? [1]

SECTION-B

8. Account for the following: [2]

- (i) Phenol is more difficult to protonate than ethanol
 (ii) ortho-nitrophenol is more acidic than ortho-methoxyphenol.

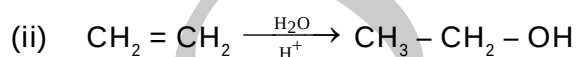
9. Name the reagents used in the following reactions: [2]

- (i) Oxidation of primary alcohols to carboxylic acids
 (ii) Dehydrogenation of propan-2-ol to propanone
 (iii) Bromination of phenol to 2, 4, 6-tribromophenol
 (iv) Oxidation of butanol to butanal

10. Explain: [2]

- (i) Why is propanol a higher boiling liquid than butane?
 (ii) Why are alcohols comparatively more soluble in water than the corresponding hydrocarbons?

11. Explain the mechanism of the following reactions: [3]



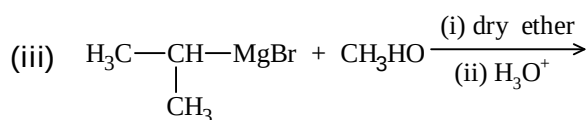
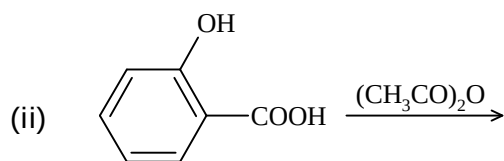
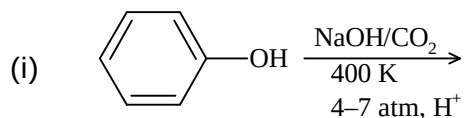
12. How are the following conversions carried out? [3]

- (i) Methyl magnesium bromide to 2-methyl propan-2-ol
 (ii) Ethene to ethoxyethane
 (iii) Phenol to phenyl ethanoate

13. Write equations for the following reactions: [3]

- (i) Friedel-Craft acetylation of anisole
 (ii) Bromination of anisole in the presence of Br_2 /ethanoic acid
 (iii) Reaction of propene with B_2H_6 followed by $\text{H}_2\text{O}_2/\text{OH}^-$

14. Give the structure and name of the major product formed in the following reactions: [3]



15. (a) Give a chemical test to distinguish between the following pairs of organic compounds: **[2+2+1]**

(i) 2-methyl propanol and 2-methyl propan-2-ol

(ii) Ethanol and propanol

(b) Explain the following name reactions:

(i) Reimer-Tieman reaction

(ii) Williamson's synthesis

(c) Complete the following:

