Chapter 11

Alcohols, Phenols and Ethers

(Assertion and Reason Questions)

Directions: These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.

(a) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.

(b) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.

(c) If the Assertion is correct but Reason is incorrect.

(d) If both the Assertion and Reason are incorrect.

Q.1. Assertion: The bond angle in alcohols is slightly less than the tetrahedral angle.
Reason: In alcohols, the oxygen of –OH group is attached to sp3 hybridized carbon atom.

Q.2. Assertion: In Lucas test, 3º alcohols react immediately.
Reason: An equimolar mixture of anhyd. $ZnCl_2$ and conc. HCl is called Lucas reagent.

Q.4. Assertion: Phenol is more reactive than benzene towards electrophilic substitution reaction.
Reason: In the case of phenol, the intermediate carbocation is more resonance stabilized.

Q.5. Assertion: In case of phenol, bromination takes place even in absence of Lewis acid whereas bromination of benzene takes place in presence of Lewis acid like

$FeBr_3$.
Reason: – OH group attached to benzene ring is highly deactivating.

Q.6. Assertion: ter – Butyl methyl ether is not prepared by the reaction of ter-butyl bromide with sodium methoxide.
Reason: Sodium methoxide is a strong nucleophile.

Q.7. Assertion: Ethers behave as bases in the presence of mineral acids.
Reason: Due to the presence of lone pairs of electrons on oxygen.

Q.8. Assertion: With HI, anisole gives iodobenzene and methyl alcohol.
Reason: Iodide ion combines with smaller group to avoid steric hindrance.

Q.9. Assertion: With HI at 373 K, ter-butyl methyl ether gives ter-butyl iodide and methanol.
Reason: The reaction occurs by SN^2 mechanism.

Q.10. Assertion: Ethyl phenyl ether on reaction with HBr form phenol and ethyl bromide.
Reason: Cleavage of C–O bond takes place on ethyloxygen bond due to the more stable phenyl-oxygen bond.

-x-x-x-

ANSWER KEY

Q.1 : (a)	**Q.2 :** (b)	**Q.3 :** (c)	**Q.4 :** (a)
Q.5 : (c)	**Q.6 :** (b)	**Q.7 :** (d)	**Q.8 :** (d)
Q.9 : (c)	**Q.10 :** (c)		