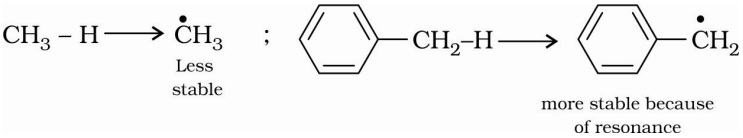
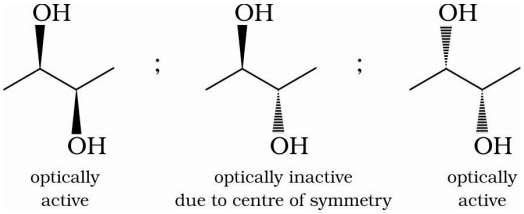
31. Hyper conjugation.

32. Less because benzylic free radical is more stable than methyl radical.



33. $\overset{5}{C}H_3\overset{4}{C}H_2\overset{3}{C}H = \overset{2}{C}H-\overset{1}{C}OOH$ pent-2-enoic acid

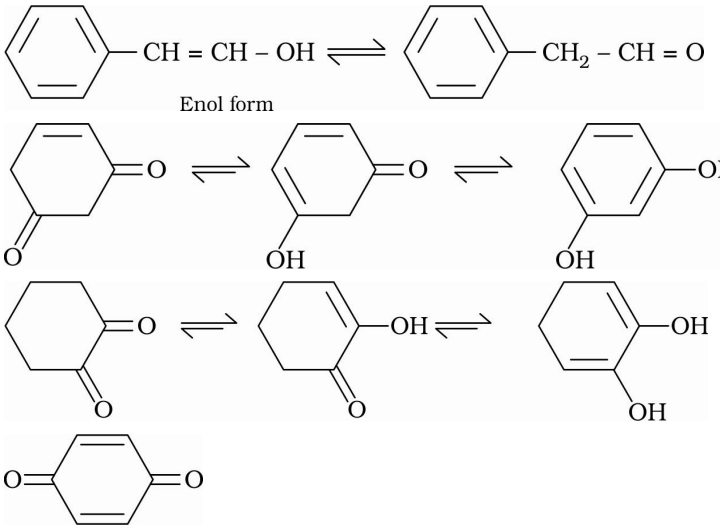
34.(B)



35.

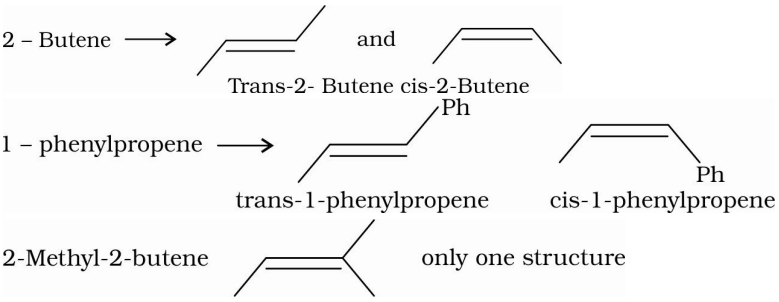
36.(ACD) All enols shows tautomerism.

All Keto compounds having α – H atoms also shows tautomerism



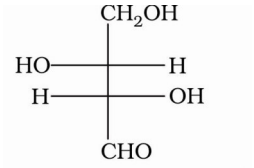
No tautomerism due to absence of αH atoms

37.(AC)



Propene has only one structure.

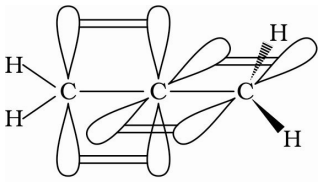
38.(C) It is dextrorotatory and derived from D-(+)-glyceraldehyde.



D – (+) – glyceraldehyde

39. Allene is prop-1, 2-diene i.e. $CH_2 = C = CH_2$.

Central carbon atom is sp hybridized and both terminal carbon atoms are sp^2 -hybridized.



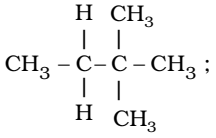
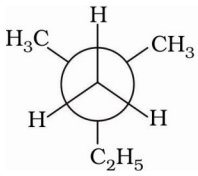
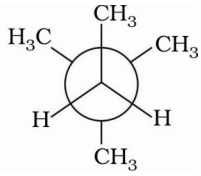
π-orbital overlap

40.(B) Structure given in option (B) is not possible for p-nitro phenoxide ion because nitrogen atom can't form five bonds.

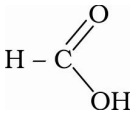
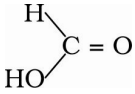
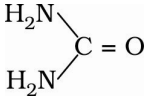
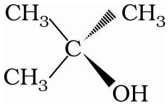
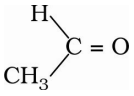
41.(AC) IUPAC name of the given compound is 1 – chloro-4-methylbenzene or 4-chlorotoluene

42.(A)  Ph due to presence of stereogenic double bond.

43. Diastereomers (I & II), (II & III), Enantiomers (I & III)

44.(BD)  ;  or 

45.(CD)

Compound	Hybridization state of C
	sp^2
	sp^2
	sp^2
	sp^3 (all c atoms)
	sp^2 and sp^3