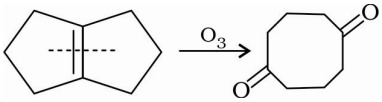
Level - 2	DTS-8

96.(C) In $\underset{1}{H_2C} = \underset{2}{C} = \underset{3}{CH_2}$, C – 1 & C – 3 are sp^2 hybridised while C – 2 is sp hybridised.

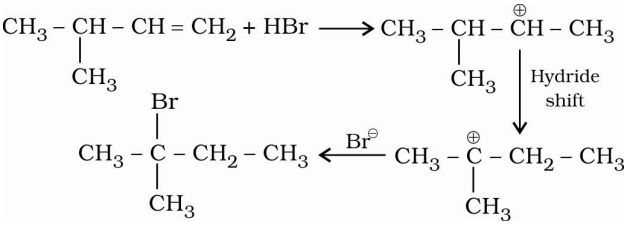
97.(D) $CH_3 - HC = CH - CH = CH_2 \xrightarrow[1\,eq]{Br_2} CH_3 - CH = CH - \underset{\displaystyle Br}{\underset{|}{CH}} - CH_2 - Br$

More substituted alkene is a stable alkene. So, Br_2 will attack on less stable alkene.

98.(B)



99.(C)



100.(C) This is based upon "Grignard reagent" as Base.

$RMgBr \xrightarrow{H_2O} RH$

$\xrightarrow{R'OH^{\delta+}} RH$

$\xrightarrow{R'C\equiv CH^{\delta+}} RH$

$A(0.42\,gm) : C_5H_8O + CH_3MgBr\,(x\,mol) \longrightarrow 224\,ml\,CH_4\,at\,STP$

$\xrightarrow[excess]{H_2}$ Pentan – 1 – ol

No. of acidic H in A = No. of mole of CH_4 formed

Mole of CH_4 = Mole of A × No. of acidic H

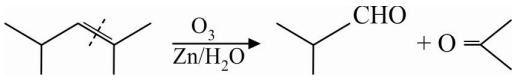
No. of acidic $H = \dfrac{224}{22400} \times \dfrac{84}{0.42} = 2$

Hence 'A' should contain 'two' acidic hydrogen. The correct option is thus (C). Note that it contains – OH group and terminal H$(R - C \equiv CH)$ having acid hydrogen.

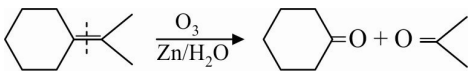
101.(BD) The alkene which is dimethylated i.e., $\begin{matrix} CH_3 \\ CH_3 \end{matrix}\!\!>\!C = \overset{|}{C}$ – will give $\underset{\text{(Acetone)}}{CH_3COCH_3}$

The correct option(s) are (B) and (D).

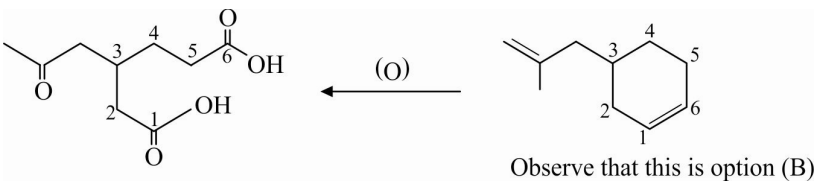
(B) :



(D) :



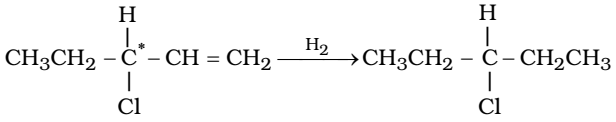
102.(B) Oxidation of alkene(s) may give acetone or acid based upon its skeleton. Observe carefully to find dialkylated end to get a ketone and simple (non-alkylated) end to get an acid.



Observe that this is option (B)

103.(C) $\underset{\text{(Optically active)}}{A\,(C_5H_9Cl)} \xrightarrow[1\,\text{mol}]{H_2} \underset{\text{(Optically inactive)}}{B}$

Note that all options (A, B, C) are optically active. We have to visualise an option which on addition of one mole of H_2 becomes inactive. The correct option is clearly (C).

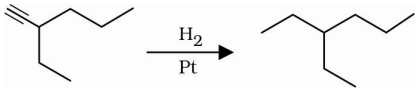


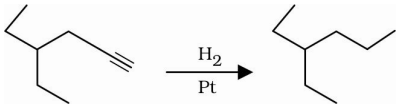
* : Chiral Centre optically inactive

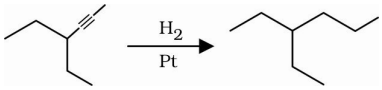
104.(ABCD)

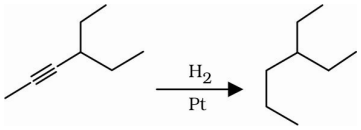
$\text{Alkyne} \xrightarrow[Pt]{H_2} \text{Alkane}$

Observe carefully that all options are correct.

(A) : 

(B) : 

(C) : 

(D) : 

105.(A)