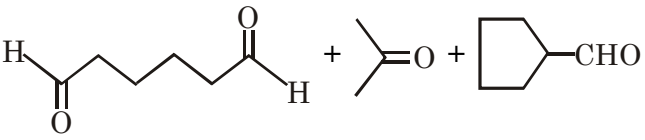
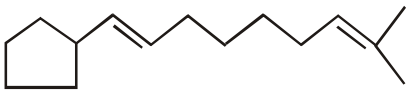
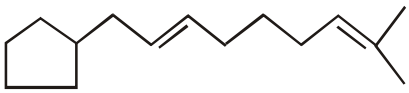
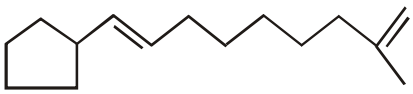
# 6. HYDROCARBON

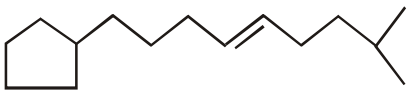
**1.** X $\xrightarrow[Zn/H_2O]{O_3}$  +  + 

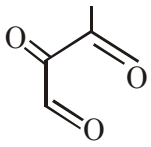
reactant 'X' is :

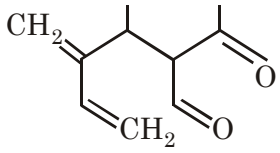
(1) 

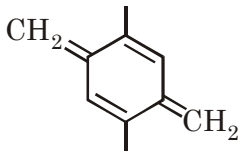
(2) 

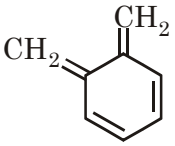
(3) 

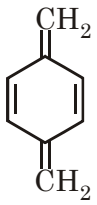
(4) 

**2.** $\underset{C_{10}H_{12}}{X} \xrightarrow[(2)\ Zn/H_2O]{(1)\ O_3}$  + HCHO  X is :

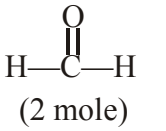
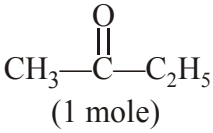
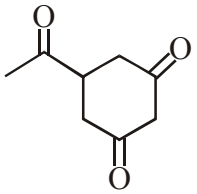
(1) 

(2) 

(3) 

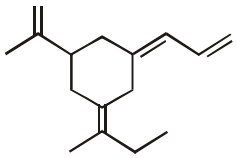
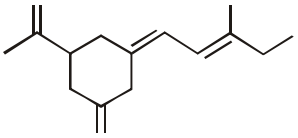
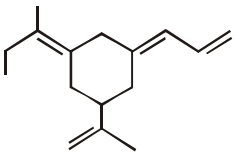
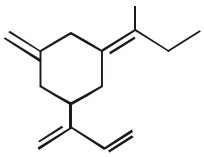
(4) 

**3.** By which compound's reductive ozonolysis the following products are obtained

 ;  ;  + 

(2 mole)  (1 mole)  (1 mole)  (1 mole)

Possible compounds are :

(A)   (B)   (C)   (D) 

(1) A, B, D  (2) A, B, C  (3) B, C, D  (4) A, C, D

**4.** 

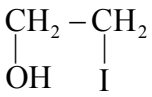
The reagents used can be

(1) $H_3O^+$ ; conc. $H_2SO_4/\Delta$  (2) $O_3$ / Zn ; LAH ; conc. $H_2SO_4$ / $\Delta$

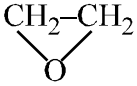
(3) $O_3$ / Zn ; $H_2$(Ni) ; $N_2H_4/OH^-$  (4) $B_2H_6$ + $H_2O_2$ + NaOH ; $Al_2O_3$

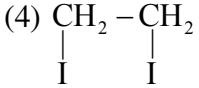
**5.** $CH_2 = CH_2 \xrightarrow{PhCO_3H} A \xrightarrow{H_3O^{\oplus}} B \xrightarrow[\Delta]{HI(Excess)} C$

Structure of C is

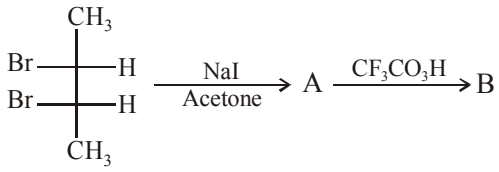
(1) 

(2) $CH_2$=$CH_2$

(3) 

(4) 

**6.** The correct statement for the given reaction is :



(1) B is optically inactive due to external compensation

(2) B is optically inactive due to internal compensation

(3) A is predominantly cis-alkene

(4) B does not have chiral centres

**7.** Following conversion can not be carried out by using sequence

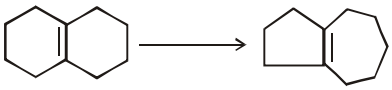
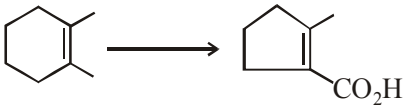
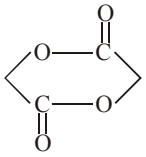
(1) (i) $LiAlH_4$ , PCC

(2) (i) R'–OH/$H^+$ (ii) DIBAL–H

(3) (i) $Ca(OH)_2$ (ii) $(HCOO)_2Ca$/ Dry distillation

(4) (i) $LiAlH_4$ (ii) $CrO_3$ + Conc. $H_2SO_4$

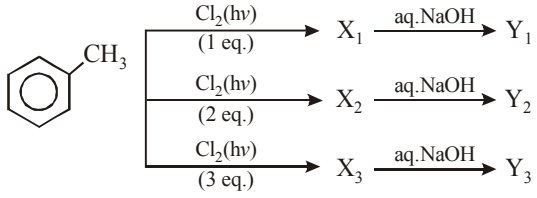
**8.**

| **List - I** **(Conversion)** | **List - II** **(Sequence of reagents for that conversion)** |
|---|---|
| (P)  | (1) (i) $SOCl_2$ , (ii) $(CH_3)_2Cd$ , (iii) $\bar{O}H/\Delta$ |
| (Q)  | (2) (i) $SeO_2$, (ii) $\bar{O}H$, (iii) $H^+/\Delta$ |
| (R) $CH_3–CH=O \longrightarrow$  | (3) (i) $O_3$/Zn, $H_2O$, (ii) $\bar{O}H/\Delta$, (iii) $N_2H_4 + \bar{O}H/\Delta$ |
| (S) $PhCO_2H \rightarrow Ph–C(CH_3)=CH–C(=O)–Ph$ | (4) (i) $O_3$/Zn, $H_2O$, (ii) $\bar{O}H/\Delta$, (iii) $NaOH+I_2;H^+$ |

**Code :**

| | **P** | **Q** | **R** | **S** |
|---|---|---|---|---|
| (1) | 3 | 4 | 1 | 2 |
| (2) | 3 | 2 | 4 | 1 |
| (3) | 3 | 4 | 2 | 1 |
| (4) | 3 | 2 | 1 | 4 |

**9.**



$Y_1 \xrightarrow[R_1]{\text{reagent}} Y_2$

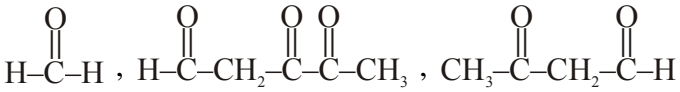
$Y_1 \xrightarrow[R_2]{\text{reagent}} Y_3$

$R_1$ & $R_2$ are respectively :

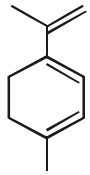
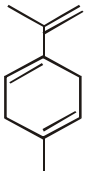
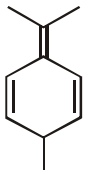
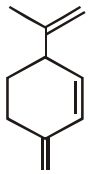
(1) PCC ; Cu + 300° C (2) PCC ; $KMnO_4$

(3) PCC ; PDC (4) $CrO_3$ ; $HIO_4$

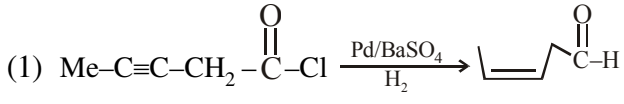
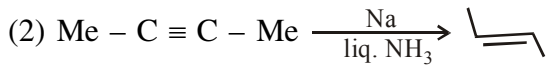
**10.** A polyene (1) reacts with 3 mole of $H_2$ gas in presence of platinum catalyst to form 1-isopropoyl 4-methyl cyclohexane. When (1) undergoes ozonolysis, following products are obtained

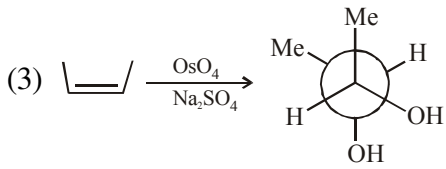
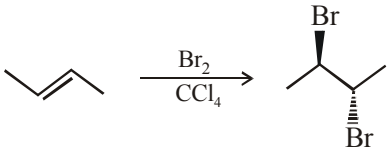


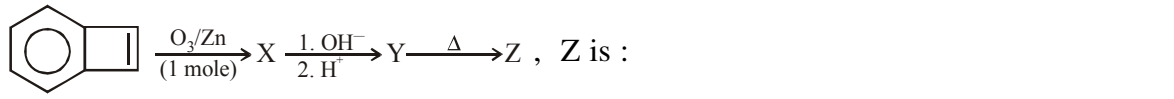
Structure of (1) is :

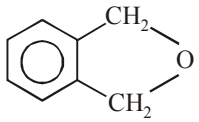
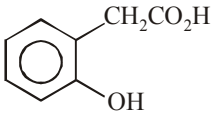
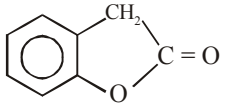
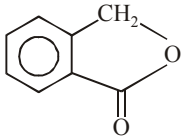
(1)  (2)  (3)  (4) 

**11.** Identify reaction incorrectly match with its product ?

(1)  (2) 

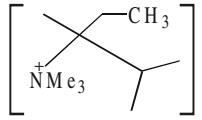
(3)  (4) 

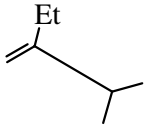
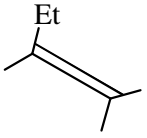
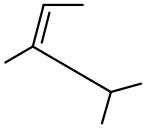
**12.**  Z is :

(1)  (2)  (3)  (4) 

**13.** An optically active compound 'X' has molecular formula $C_4H_8O_3$. It evolves $CO_2$ with $NaHCO_3$. 'X' reacts with $LiAlH_4$ to give an achiral compound 'X' is :

(1) $CH_3CH_2\underset{\displaystyle OH}{\underset{|}{C}}HCOOH$ (2) $CH_3\underset{\displaystyle OH}{\underset{|}{C}}HCOOH$ (3) $CH_3\underset{\displaystyle CH_2OH}{\underset{|}{C}}HCOOH$ (4) $CH_3\text{–}\underset{\displaystyle OH}{\underset{|}{C}}H\text{–}CH_2\text{–}COOH$

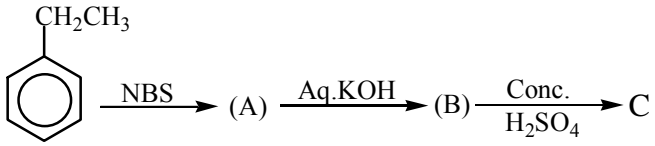
**14.**  Olefinic product., Identify major product

(1)  (2)  (3)  (4) None of these

**15.** $CH_3-\underset{\displaystyle CH_2-CH_3}{\overset{\displaystyle |}{CH}}-CH_2-CH_2-CH_3$

Number of monochlorinated products when above compound undergo reaction with $Cl_2$/hv is :

(1) 10 (2) 15 (3) 18 (4) 20

**16.** 

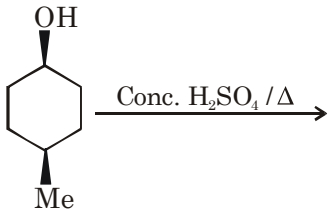

Which statement is incorrect regarding C

(1) C decolorised $Br_2$ water

(2) C on reaction with HBr & HBr + $H_2O_2$ giving same product

(3) C is also formed when A undergoes reaction with alcoholic KOH

(4) C when reacts with $H_3O^+$, B is formed

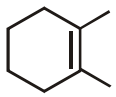
**17.** 

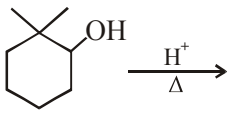

; Identify correct statement about product mixture :

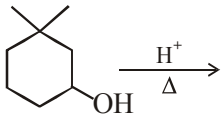
(1) It is resolvable (2) It is non resolvable

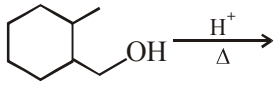
(3) Meso is obtained (4) Diastereoisomeric product is obtained

**18.** Which of the following reaction will not produce given alkene as major product ?



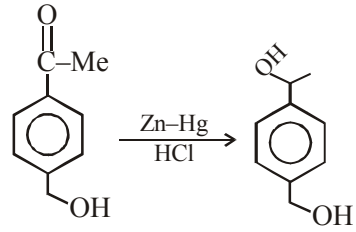
(1) 

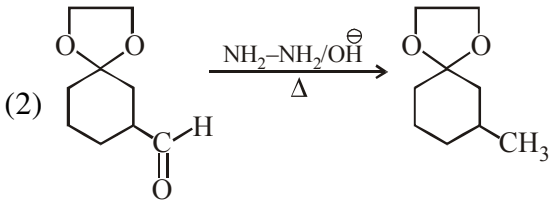

(2) 

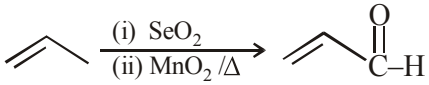

(3) 

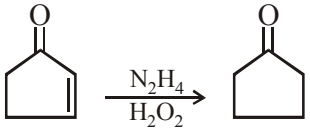

(4) None of these

**19.** Identify reaction incorrectly match with its product ?

(1) 


(2) 


(3) 


(4) 


| ANSWER KEY | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Que.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| **Ans.** | **1** | **2** | **2** | **2** | **2** | **1** | **4** | **3** | **2** | **2** | **3** | **4** | **3** | **1** | |
| **Que.** | 16 | 17 | 18 | 19 | | | | | | | | | | | |
| **Ans.** | **2** | **1** | **2** | **1** | | | | | | | | | | | |