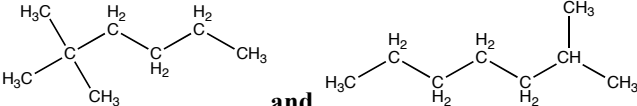
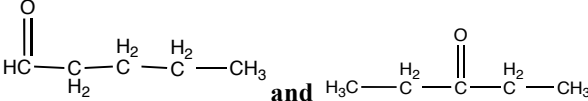
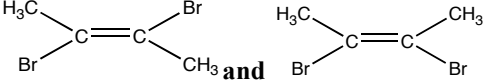
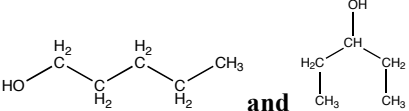
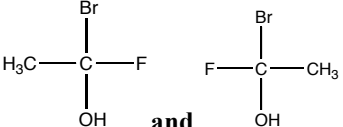
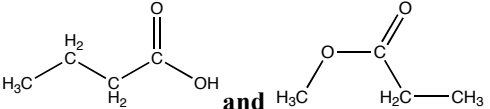
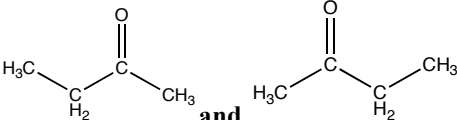
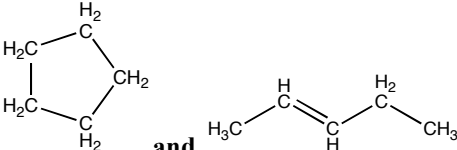


For the following state the type of reaction

1.	$\begin{array}{c} \text{H} & \text{H} \\ & \\ \text{H}_3\text{C}-\text{C}=\text{C}-\text{C}-\text{CH}_3 \\ & \\ \text{H} & \text{H} \end{array} + \text{H}-\text{H} \longrightarrow \begin{array}{c} \text{H} & \text{H} & \text{H} \\ & & \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{C}-\text{CH}_3 \\ & & \\ \text{H} & \text{H} & \text{H} \end{array}$	
2.	$\begin{array}{c} \text{OH} \\ \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\ & \\ \text{H}_2 & \text{H}_2 \end{array} \xrightarrow{[\text{O}]} \begin{array}{c} \text{O} \\ \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\ & \\ \text{H}_2 & \text{H}_2 \end{array}$	
3.	$\begin{array}{c} \text{H}_2 \\ \\ \text{H}_3\text{C}-\text{C}-\text{CH}_3 \\ \\ \text{H}_2 \end{array} + 5 \text{O}=\text{O} \longrightarrow 3 \text{O}=\text{C}=\text{O} + 4 \text{H}-\text{O}-\text{H}$	
4.	$\begin{array}{c} \text{O} \\ \\ \text{H}_3\text{C}-\text{C}-\text{OH} \\ \\ \text{H}_2 \end{array} + \begin{array}{c} \text{H}_2 & \text{H}_2 \\ & \\ \text{HO}-\text{C}-\text{C}-\text{CH}_3 \\ & \\ \text{H}_2 & \text{H}_2 \end{array} \longrightarrow \text{H}-\text{O}-\text{H} + \begin{array}{c} \text{O} \\ \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{O}-\text{C}-\text{C}-\text{CH}_3 \\ & & \\ \text{H}_2 & \text{H}_2 & \text{H}_2 \end{array}$	
5.	$\begin{array}{c} \text{H} & \text{H} & \text{H} & \text{H} \\ & & & \\ \text{O}=\text{C}-\text{C}-\text{C}-\text{C}-\text{H} \\ & & & \\ \text{H} & \text{H} & \text{H} & \text{H} \end{array} \xrightarrow{[\text{O}]} \begin{array}{c} \text{H} & \text{H} & \text{H} & \text{O} \\ & & & \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{OH} \\ & & & \\ \text{H} & \text{H} & \text{H} & \text{H} \end{array}$	
6.	$\begin{array}{c} \text{O} \\ \\ \text{H}_3\text{C}-\text{O}-\text{C}-\text{CH}_3 \end{array} + \text{H}-\text{O}-\text{H} \longrightarrow \text{H}_3\text{C}-\text{OH} \quad \begin{array}{c} \text{O} \\ \\ \text{H}_3\text{C}-\text{C}-\text{OH} \end{array}$	
7.	$\begin{array}{c} \text{H}_2 & \text{H}_2 & \text{H}_2 \\ & & \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{C}-\text{NH}_2 \end{array} \quad \begin{array}{c} \text{O} \\ \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{OH} \end{array} \longrightarrow \begin{array}{c} \text{H}_3\text{C}-\text{H}_2-\text{H}_2-\text{H}_2-\text{NH}_3^+ \\ & & \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{C}-\text{O}^- \\ & & \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{C}-\text{O} \end{array}$	
8.	$\begin{array}{c} \text{HO}-\text{C}-\text{C}-\text{CH}_3 \\ & \\ \text{H}_2 & \text{H}_2 \end{array} \xrightarrow{[\text{O}]} \begin{array}{c} \text{O} \\ \\ \text{H}-\text{C}-\text{C}-\text{CH}_3 \\ & \\ \text{H}_2 & \text{H}_2 \end{array}$	
9.	$\begin{array}{c} \text{H} & \text{H} & \text{H} \\ & & \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{H} \\ & & \\ \text{H} & \text{H} & \text{H} \end{array} + \text{Br}-\text{Br} \longrightarrow \begin{array}{c} \text{H} & \text{Br} & \text{H} \\ & & \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{H} \\ & & \\ \text{H} & \text{H} & \text{H} \end{array} + \text{H}-\text{Br}$	
10.	$\begin{array}{c} \text{H}_2 & \text{H}_2 \\ & \\ \text{H}_3\text{C}-\text{C}-\text{O}-\text{C}-\text{CH}_3 \\ & \\ \text{H}_2 & \text{H}_2 \end{array} + \text{H}-\text{O}-\text{H} \longrightarrow \begin{array}{c} \text{H}_2 \\ \\ \text{HO}-\text{C}-\text{C}-\text{CH}_3 \\ \\ \text{H}_2 \end{array} + \begin{array}{c} \text{H}_2 \\ \\ \text{HO}-\text{C}-\text{CH}_3 \\ \\ \text{H}_2 \end{array}$	
11.	$\text{H}_3\text{C}-\text{OH} \quad \text{H}_3\text{C}-\text{OH} \longrightarrow \begin{array}{c} \text{O} \\ \\ \text{H}_3\text{C}-\text{C}-\text{CH}_3 \end{array}$	
12.	$\begin{array}{c} \text{H} \\ \\ \text{H}_3\text{C}-\text{C}=\text{C}-\text{CH}_3 \\ \\ \text{H} \end{array} + \text{H}-\text{O}-\text{H} \longrightarrow \begin{array}{c} \text{OH} \\ \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\ \\ \text{H}_2 \end{array}$	
13.	$\text{H}_2\text{N}-\text{C}-\text{H} + \begin{array}{c} \text{O} \\ \\ \text{H}_3\text{C}-\text{C}-\text{OH} \\ \\ \text{H}_2 \end{array} \longrightarrow \begin{array}{c} \text{O} \\ \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{N}-\text{CH}_3 \\ & \\ \text{H}_2 & \text{H} \end{array} + \text{H}-\text{O}-\text{H}$	
14.	$\text{H}_3\text{C}-\text{C}\equiv\text{C}-\text{C}-\text{CH}_3 + \text{Cl}-\text{Cl} \longrightarrow \begin{array}{c} \text{H}_2 & \text{Cl} & \text{Cl} \\ & & \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{C}-\text{CH}_3 \\ & & \\ \text{Cl} & \text{Cl} & \text{Cl} \end{array}$	

For the following state what type of isomerism is displayed. If they are the same compound state that they are the same.

15.	 <p style="text-align: center;">and</p>	
16.	 <p style="text-align: center;">and</p>	
17.	 <p style="text-align: center;">and</p>	
18.	 <p style="text-align: center;">and</p>	
19.	 <p style="text-align: center;">and</p>	
20.	 <p style="text-align: center;">and</p>	
21.	 <p style="text-align: center;">and</p>	
22.	 <p style="text-align: center;">and</p>	