Paragraph for Question No. 121 to 123

Lemieux reagent consist of an aqueous solution of sodium periodate ($NaIO_4$) and a trace of $KMnO_4$. It is used for locating the position of double bond in an alkene. During the reaction, the alkene is first oxidised to *cis*-diol which upon cleavage with sodium peroxide gives aldehydes and ketones (similar to ozonolysis). Hot solution of acidic or alkaline $KMnO_4$ can also be used for locating double bond by observing the products which are ketones or carboxylic acids. Position of triple bond can be identified by similar process.

121. An alkene on treatment with $NaIO_4$, $KMnO_4$ and Na_2O_2 gives acetone and acetaldehyde. The alkene is :

(A) 2, 3-dimethylbut-2-ene **(B)** 2-methylbut-2-ene

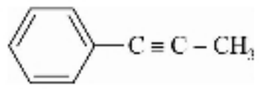
(C) 3-methylbut-1-ene **(D)** 3, 3-dimethylbut-1-ene

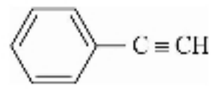
122. An unsaturated hydrocarbon (X) on treatment with cold alkaline $KMnO_4$ followed by acidification gives 2-oxopropanoic acid. The hydrocarbon (X) is :

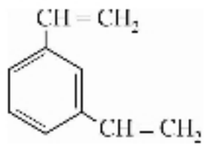
(A) $CH_3C \equiv CH$ **(B)** $CH_3 - C \equiv C - CH_3$

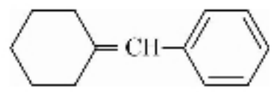
(C) $CH_2 = C = CH_2$ **(D)** $CH_3CH = CH_2$

***123.** An aromatic hydrocarbon (Y) on treatment with $KMnO_4$ with H^+ / Δ gives benzoic acid as one of the products. The hydrocarbon (Y) is :

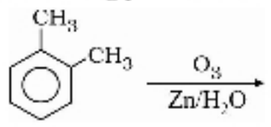
(A) 

(B) 

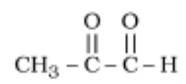
(C) 

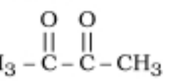
(D) 

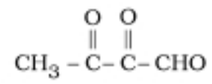
***124.** Which of the following products can be obtained by reductive ozonolysis of *o*-xylene ?

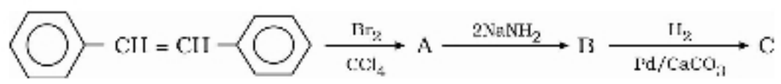


(A) 

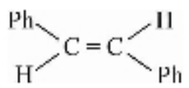
(B) 

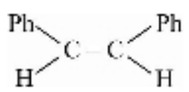
(C) 

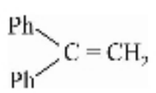
(D) 

125. 

The product (C) is :

(A) 

(B) 

(C) 

(D) $Ph - C \equiv C - Ph$