# **Exercise**

## **PART - I : ONLY ONE OPTION CORRECT TYPE**



Sol.



### Section (C) : Test for acidic hydrogen & unsaturation

12.🖎



13.

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Sol. / have two types of chemically different hydrogen atom so it forms two monochloro isomers on photochemical chlorination.





15.🖎



 $O_3/Zn \rightarrow$  2-methylpentanedial+4-oxopentanal+formaldehyde+acetone.

16.



CH₃

17.







 $\begin{array}{cccc} CH_3 & CH_3 & CH_3 & CH_3 & CH_3 & CH_3 \\ & & & & & & & \\ H_3C - C - C - C - CH_3 & H_3C - C - CH - C - CH_3 \\ & & & & & & \\ H_3C - C - CH_3 & CH_3 & CH_3 \\ & & & & & \\ CH_3CH_2CH_3 & \underline{H_2 / \text{ catalyst}} \end{array}$ 

Three monochloro isomers are possible as it has three different types of 'H' atoms.

29.



### PART - IV : JEE (MAIN) / AIEEE PROBLEMS (PREVIOUS YEARS) V : JEE (MAIN) / AIEEE

32.

**Sol.** The number of monohalogenation products obtained from any alkane depends upon the number of different types of hydrogen it contains. Compound containing only one type of hydrogen gives only one monohalogenation product.

CH <sub>3</sub> CH <sub>2</sub> CH <sub>3</sub>		two types of hydrogen (two monobalogenation structural product)
CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub> pentane CH <sub>3</sub>	—	three types of hydrogen (two monohalogenation structural product)
$CH_3 - CH - CH_2 - CH_3$ isopentane $CH_3$	_	four types of hydrogen (four monohalogenation structural product)
$H_{3}C - C - CH_{3}$ $H_{3}C - CH_{3}$		
neopentane	—	one types of hydrogen (one monohalogenation structural product)

Thus the given alkane should be neopentane.

Sol. 2,3-Dimethylbutane has two chemically different hydrogen atoms so it can give two monochlorinated structural compounds.

34.

 $\xrightarrow[H_2O]{O_3 / Zn} 2CH_3CHO.$ CH<sub>3</sub>CH=CHCH<sub>3</sub> Sol.

35.

 $CH_{3} - C = CH - CH_{2} - CH_{3} \xrightarrow{O_{3}/Zn, H_{2}O} CH_{3} - C = O + CH_{3} - CH_{2} - C \xrightarrow{H}^{O}$ Propionaldehyde (2-Methyl-2-pentene) Acetone (A)

Sol.

36.

 $H_3C - CH_3 \xrightarrow{Cl_2/hv} monohalogenation$ ĊH₃

neopentane Sol.

single product.

37.



Sol.