

PYQSide

JEE MAIN HYDROCARBONS — CHEMICAL PROPERTIES OF ALKANES — PYQS

Max. Marks: 20

Questions: 5

Section A (MCQ)

- Q.1** n-Butane on monochlorination under photochemical condition gives an optically active compound "P". "P" on further chlorination gives dichloro compounds. The number of dichloro compounds obtained (ignore stereoisomers) is :

[JEE Main 2026 (Online) 8th April Evening Shift]

- (1) 3 (2) 4 (3) 5 (4) 6

Scan or tap for the full solution



- Q.2** The compound (X) on
 (i) on heating in the presence of anhydrous AlCl_3 and HCl gas gives 2,4-dimethyl pentane
 (ii) aromatization gives toluene and
 (iii) cyclisation gives methyl cyclohexane
 The correct name of compound (X) is:

[JEE Main 2026 (Online) 2nd April Evening Shift]

- (1) Hept-2-ene (2) Hept-1,3,5-triene
 (3) Heptane (4) Hept-2,4,6-triene

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- Q.3** The reactions which produce alcohol as the product are :

- A. $\text{CH}_4 + \text{O}_2 \xrightarrow{\text{Mo}_2\text{O}_3, \Delta}$
 B. $2\text{CH}_3\text{CH}_3 + 3\text{O}_2 \xrightarrow{(\text{CH}_3\text{COO})_2\text{Mn}, \Delta}$
 C. $(\text{CH}_3)_3\text{CH} \xrightarrow{\text{KMnO}_4}$
 D. $2\text{CH}_4 + \text{O}_2 \xrightarrow{\text{Cu}/523 \text{ K}/100 \text{ atm}}$
 E. $\text{CH}_3-\text{CH}=\text{CH}-\text{CH}_3 \xrightarrow{\text{KMnO}_4/\text{H}^+}$

Choose the **correct** answer from the options given below :

[JEE Main 2026 (Online) 28th January Evening Shift]

- (1) B, D and E Only (2) A and D Only
 (3) A, C and E Only (4) C and D Only

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Section B (Numerical)

- Q.4** An alkane (Y) requires 8 moles of oxygen for complete combustion and on chlorination with $\text{Cl}_2/h\nu$, (Y) gives only one monochlorinated product (Z). The total number of primary carbon atoms in (Y) is _____.

[JEE Main 2026 (Online) 6th April Evening Shift]

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- Q.5** One mole of an alkane (x) requires 8 mole oxygen for complete combustion. Sum of number of carbon and hydrogen atoms in the alkane (x) is _____.

[JEE Main 2026 (Online) 2nd April Morning Shift]

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ANSWER KEY

Section A (MCQ)

Ques.	1	2	3								
Ans.	2	3	4								

Section B (Numerical)

Ques.	4	5									
Ans.	4	17									