

PYQSide

JEE MAIN BINOMIAL THEOREM — GENERAL TERM AND MIDDLE TERMS — PYQS

Max. Marks: 24

Questions: 6

Section A (MCQ)

- Q.1** If the coefficients of the middle terms in the binomial expansions of $(1 + \alpha x)^{26}$ and $(1 - \alpha x)^{28}$, $\alpha \neq 0$, are equal, then the value of α is :

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

- (1) 1 (2) $\frac{14}{13}$ (3) $\frac{27}{7}$ (4) $\frac{7}{27}$

Scan or tap for the full solution 

- Q.2** The number of integral terms in the expansion of $\left(\frac{1}{5^2} + \frac{1}{7^8}\right)^{1016}$ is:

[JEE Main 2025 (Online) 8th April Evening Shift]

- (1) 127 (2) 128 (3) 130 (4) 129

Scan or tap for the full solution 

- Q.3** In the expansion of $\left(\sqrt[3]{2} + \frac{1}{\sqrt[3]{3}}\right)^n$, $n \in \mathbb{N}$, if the ratio of 15th term from the beginning to the 15th term from the end is $\frac{1}{6}$, then the value of ${}^nC_3$ is

[JEE Main 2025 (Online) 4th April Morning Shift]

- (1) 4960 (2) 2300 (3) 1040 (4) 4060

Scan or tap for the full solution 

- Q.4** The sum of all rational terms in the expansion of $(2 + \sqrt{3})^8$ is :

[JEE Main 2025 (Online) 3rd April Morning Shift]

- (1) 16923 (2) 18817 (3) 3763 (4) 33845

Scan or tap for the full solution 

- Q.5** The least value of n for which the number of integral terms in the Binomial expansion of $(\sqrt[3]{7} + \sqrt[12]{11})^n$ is 183, is :

[JEE Main 2025 (Online) 29th January Morning Shift]

- (1) 2184 (2) 2172 (3) 2196 (4) 2148

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- Q.6** Let the coefficients of three consecutive terms T_r , T_{r+1} and T_{r+2} in the binomial expansion of $(a + b)^{12}$ be in a G.P. and let p be the number of all possible values of r . Let q be the sum of all rational terms in the binomial expansion of $(\sqrt[4]{3} + \sqrt[3]{4})^{12}$. Then $p + q$ is equal to:

[JEE Main 2025 (Online) 28th January Evening Shift]

- (1) 295 (2) 283 (3) 299 (4) 287

Scan or tap for the full solution 

ANSWER KEY

Ques.	1	2	3	4	5	6					
Ans.	4	2	2	2	1	2					