

JEE MAIN BINOMIAL THEOREM — TERM INDEPENDENT OF x, COEFFICIENT OF A PARTICULAR TERM — PYQS

Max. Marks: 28
Questions: 7

Section A (MCQ) — 6 questions

Q.1 The coefficient of x^2 in the expansion of $\left(2x^2 + \frac{1}{x}\right)^{10}$, $x \neq 0$, is :

[JEE Main 2026 (Online) 5th April Evening Shift]

- (1) 3240 (2) 3360 (3) 3480 (4) 3600

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full solution



Q.2 Let the smallest value of $k \in \mathbb{N}$, for which the coefficient of x^3 in $(1+x)^3 + (1+x)^4 + (1+x)^5 + \dots + (1+x)^{99} + (1+kx)^{100}$, $x \neq 0$, is $\left(43n + \frac{101}{4}\right)(^{100}C_3)$ for some $n \in \mathbb{N}$, be p . Then the value of $p + n$ is :

[JEE Main 2026 (Online) 4th April Morning Shift]

- (1) 10 (2) 11 (3) 12 (4) 13

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Q.3 In the expansion of $\left(9x - \frac{1}{3\sqrt{x}}\right)^{18}$, $x > 0$, if the term independent of x is $(221)k$, then k is equal to :

[JEE Main 2026 (Online) 4th April Evening Shift]

- (1) 84 (2) 78 (3) 168 (4) 198

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Q.4 The sum of all possible values of $n \in \mathbb{N}$, so that the coefficients of x , x^2 and x^3 in the expansion of $(1+x^2)^2(1+x)^n$, are in arithmetic progression is :

[JEE Main 2026 (Online) 23rd January Morning Shift]

- (1) 12 (2) 9 (3) 3 (4) 7

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Q.5 If the coefficient of x in the expansion of $(ax^2 + bx + c)(1 - 2x)^{26}$ is -56 and the coefficients of x^2 and x^3 are both zero, then $a + b + c$ is equal to :

[JEE Main 2026 (Online) 21st January Morning Shift]

- (1) 1483 (2) 1300 (3) 1500 (4) 1403

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Q.6 The term independent of x in the expansion of $\left(\frac{(x+1)}{(x^{2/3} + 1 - x^{1/3})} - \frac{(x-1)}{(x-x^{1/2})}\right)^{10}$, $x > 1$, is :

[JEE Main 2025 (Online) 2nd April Morning Shift]

- (1) 240 (2) 120 (3) 150 (4) 210

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Section B (Numerical) — 1 question

Q.7 If the sum of the coefficients of x^7 and x^{14} in the expansion of $\left(\frac{1}{x^3} - x^4\right)^n$, $x \neq 0$, is zero, then the value of n is _____.

[JEE Main 2026 (Online) 5th April Morning Shift]

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ANSWER KEY

Section A (MCQ) — 6 questions

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

Section B (Numerical) — 1 question

Ques.	7												
Ans.	21												