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JEE MAIN PROBABILITY — PROBABILITY OF EQUALLY LIKELY OUTCOMES — PYQS

Max. Marks: 48 **Questions:** 12

Section A (MCQ) — 6 questions

Q.1 A bag contains 6 blue and 6 green balls. Pairs of balls are drawn without replacement until the bag is empty. The probability that each drawn pair consists of one blue and one green ball is :

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

(1) $\frac{63}{925}$ (2) $\frac{17}{231}$ (3) $\frac{16}{231}$ (4) $\frac{64}{925}$

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Q.2 A man throws a fair coin repeatedly. He gets 10 points for each head he throws and 5 points for each tail he throws. If the probability that he gets exactly 30 points is $\frac{m}{n}$, $\gcd(m, n) = 1$, then m + n is equal to :

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

(1) 53 (2) 55 (3) 107 (4) 105

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Q.3 Two distinct numbers a and b are selected at random from 1, 2, 3, …, 50. The probability, that their product ab is divisible by 3, is

[JEE Main 2026 (Online) 22nd January Morning Shift]

(1) $\frac{272}{1225}$ (2) $\frac{561}{1225}$ (3) $\frac{664}{1225}$ (4) $\frac{8}{25}$

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Q.4 The probability of forming a 12 persons committee from 4 engineers, 2 doctors and 10 professors containing at least 3 engineers and at least 1 doctor, is

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

(1) $\frac{129}{182}$ (2) $\frac{17}{26}$ (3) $\frac{19}{26}$ (4) $\frac{103}{182}$

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Q.5 Two numbers k_1 and k_2 are randomly chosen from the set of natural numbers. Then, the probability that the value of $i^{k_1} + i^{k_2}$, $(i = \sqrt{-1})$ is non-zero, equals

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

(1) $\frac{3}{4}$ (2) $\frac{1}{2}$ (3) $\frac{1}{4}$ (4) $\frac{2}{3}$

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Q.6 Let S be the set of all the words that can be formed by arranging all the letters of the word GARDEN. From the set S, one word is selected at random. The probability that the selected word will NOT have vowels in alphabetical order is:

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

(1) $\frac{1}{4}$ (2) $\frac{1}{2}$ (3) $\frac{1}{3}$ (4) $\frac{2}{3}$

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Section B (Numerical) — 6 questions

Q.7 A coin is tossed 8 times. If the probability that exactly 4 heads appear in the first six tosses and exactly 3 heads appear in the last five tosses is p, then 96p is equal to _____.

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

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Q.8 From a month of 31 days, 3 different dates are selected at random. If the probability that these dates are in an increasing A.P. is equal to $\frac{a}{b}$, where $a, b \in N$ and $\gcd(a, b) = 1$, then a + b is equal to _____.

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

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Q.9 Let $a, b, c \in \{1, 2, 3, 4\}$. If the probability, that $ax^2 + 2\sqrt{2}\,bx + c > 0$ for all $x \in R$, is $\frac{m}{n}$, $\gcd(m, n) = 1$, then m + n is equal to _____.

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

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Q.10 Let S be a set of 5 elements and P(S) denote the power set of S. Let E be an event of choosing an ordered pair (A, B) from the set P(S) × P(S) such that $A \cap B = \varnothing$. If the probability of the event E is $\frac{3^p}{2^q}$, where $p, q \in N$, then p + q is equal to _____.

[JEE Main 2026 (Online) 24th January Evening Shift]

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Q.11 From the first 100 natural numbers, two numbers first a and then b are selected randomly without replacement. If the probability that $a - b \geqslant 10$ is $\frac{m}{n}$, $\gcd(m, n) = 1$, then m + n is equal to _____.

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

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Q.12 Three distinct numbers are selected randomly from the set {1, 2, 3, …, 40}. If the probability, that the selected numbers are in an increasing G.P., is $\frac{m}{n}$, $\gcd(m, n) = 1$, then m + n is equal to _____.

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

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ANSWER KEY

Section A (MCQ) — 6 questions

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

Section B (Numerical) — 6 questions

Ques.	7	8	9	10	11	12	
Ans.	**9**	**944**	**81**	**15**	**311**	**2477**	