

JEE MAIN PROBABILITY — 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 $a, b \in \mathbb{N}$ 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 $x \in \mathbb{R}$, 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 $P(S) \times P(S)$ such that $A \cap B = \emptyset$. If the probability of the event E is $\frac{3^p}{2^q}$, where $p, q \in \mathbb{N}$, 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 $a - b \geq 10$ 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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full solution



- Q.12** Three distinct numbers are selected randomly from the set $\{1, 2, 3, \dots, 40\}$. 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	