MATHS

BOOKS - JEE MAINS PREVIOUS YEAR

ENGLISH

PROBABILITY

Others

1. A pair of fair dice is thrown independently three times. The probability of getting a score

of exactly 9 twice is (1) 1/729 (2) 8/9 (3) 8/729

(4) 8/243

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2. Two aeroplanes I and II bomb a target in succession. The probabilities of I and II scoring a hit correctly are 0.3 and 0.2, respectively. The second plane will bomb only if the first misses

the target. The probability that the target is hit by the second plane is (A) 0.06 (B) 0.14 (C) $\frac{7}{22}$ (D) 0.7

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3. A die is thrown. Let A be the event that the number obtained is greater than 3. Let B be the event that the number obtained is less than 5. Then $P(A \cup B)$ is (1) $\frac{3}{5}$ (2) 0 (3) 1 (4) $\frac{2}{5}$

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4. It is given that the events A and B are such that

$P(A) = \frac{1}{4}, P\left(\frac{A}{B}\right) = \frac{1}{2} \text{and} p\left(\frac{B}{A}\right) = \frac{2}{3}.$

Then P(B) is: (1) $\frac{1}{6}$ (2) $\frac{1}{3}$ (3) $\frac{2}{3}$ (4) $\frac{1}{2}$

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5. One ticket is selected at random from 100 tickets numbered $00, 01, 02, \ldots, 99$. Suppose A and B are the sum and product of the digit

found on the ticket, respectively. Then $P((A=7)/(B=0))$ is given by

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6. An urn contains nine balls of which three are red, four are blue and two are green. Three balls are drawn at random without replacement from the urn. The probability that the three balls have different colour is (1) $\frac{2}{7}$ (2) $\frac{1}{21}$ (3) $\frac{2}{23}$ (4) $\frac{1}{3}$

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7. A particle just clears a wall of height b at distance a and strikes the ground at a distance c from the point of projection. The angle of projection is (1) $\frac{\tan^{-1} b}{ac}$ (2) 45^o (3) $\frac{\tan^{-1}(bc)}{a(c-a)}$ (4) $\frac{\tan^{-1}(bc)}{a}$

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8. Consider 5 independent Bernoulli.s trials each with probability of success p. If the

probability of at least one failure is greater than or equal to $\frac{31}{32}$, then p lies in the interval : (1) $\left(\frac{1}{2}, \frac{3}{4}\right]$ (2) $\left(\frac{3}{4}, \frac{11}{12}\right]$ (3) $\left[0, \frac{1}{2}\right]$ (4) $\left(\frac{11}{12}, 1\right]$

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9. Three numbers are chosen at random without replacement from {1, 2, 3, ... 8}. The probability that their minimum is 3, given that their maximum is 6, is (1) $\frac{3}{8}$ (2) $\frac{1}{5}$ (3) $\frac{1}{4}$ (4) $\frac{2}{5}$

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10. Let A and B be two events such that $p(\overline{A} \cup B) = \frac{1}{6}, p(A \cap B) = \frac{1}{4}$ and $p(\overline{A}) = \frac{1}{4}$, where $\overline{A}$ stands for the complement of the event A. Then the (1) mutually exclusive and independent (2) equally likely but not independent (3) independent but not equally likely (4) independent and equally likely

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11. Twelve balls are distribute among three boxes. The probability that the first box contains three balls is $\frac{110}{9}\left(\frac{2}{3}\right)^{10}$ b. $\frac{110}{9}\left(\frac{2}{3}\right)^{10}$ c. $\frac{\hat{}(12)C_3}{12^3} \times 2^9$ d. $\frac{\hat{}(12)C_3}{3^{12}}$

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12. If two different numbers are taken from the set $\{0, 1, 2, 3, \ldots\ldots, 10\}$; then the probability that their sum as well absolute difference are both multiple of 4, is: (1) $\frac{14}{45}$ (2) $\frac{7}{55}$ (3) $\frac{6}{55}$ (4) $\frac{12}{55}$

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13. For three events A, B and C, P (Exactly one of A or B occurs) $= P$ (Exactly one of B or C occurs) $= P$ (Exactly one of C or A occurs) $= \frac{1}{4}$ and P (All the three events occur simultaneously) $= \frac{1}{6}$. Then the probability that at least one of the events occurs, is : $\frac{7}{64}$ (2) $\frac{3}{16}$ (3) $\frac{7}{32}$ (4) $\frac{7}{16}$

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