

Maths Sample Paper for Class XII
Topic – PROBABILITY

Time : 90 min

1. The probability of a student A passing an examination is $\frac{2}{9}$ and of student B passing is $\frac{5}{9}$. Assuming the two events: 'A passes', 'B passes independent', find the probability of: (i) only A passing the examination (ii) only one of them passing the examination.
2. There are three urns A, B and C. Urn A contains 4 red balls and 3 black balls. Urn B contains 5 red balls and 4 black balls. Urn C contains 4 red balls and 4 black balls. One ball is drawn from each of these Urns. What is the probability that three balls drawn consist of 2 red balls and a black ball?
3. A bag contains 6 red balls and 8 black balls and another bag contains 8 red balls and 6 black balls. A ball is drawn from the first bag and without noticing its color is put in the second bag. A ball is drawn from the second bag. Find the probability that the ball drawn is red in color.
4. A bag contains 4 white balls and 2 black balls and another contains 3 white balls and 5 black balls. If one ball is drawn from each bag, find the probability that
 - (i) both are white
 - (ii) both are black
 - (iii) one is white and one is black
5. A husband and wife appear in an interview for two vacancies in the same post. The probability of husband's selection is $\frac{1}{7}$ and that of wife's selection is $\frac{1}{5}$. What is the probability that
 - (a) both of them will be selected
 - (b) only one of them will be selected
 - (c) none of them will be selected
6. Two cards are drawn from a well-shuffled pack of 52 cards, one after another without replacement. Find the probability that one of these is red card and the other a black card?
7. Tickets are numbered from 1 to 10. Two tickets are drawn one after the other at random. Find the probability that the number on one of the tickets is a multiple of 5 and on the other a multiple of 4.
8. In a family, the husband tells a lie in 30% cases and the wife in 35% cases. Find the probability that both contradict each other on the same fact.
9. An unbiased die is tossed twice. Find the probability of getting 4, 5 or 6 on the first toss and 1, 2, 3, or 4 on the second toss.
10. A dice is thrown twice and the sum of the numbers appearing is observed to be 6. What is the conditional probability that the number 4 has appeared at least once?
11. A bag contains 5 white, 7 red and 3 black balls. If three balls are drawn one by one without replacement, find the probability that none is red.
12. A die is thrown twice and the sum of the numbers appearing is observed to be 8. What is the conditional probability that the number 5 has appeared at least once?
13. A bag contains tickets numbered from 1 to 20. Two tickets are drawn. Find the probability that (i) both the tickets have prime numbers on them (ii) on one there is a prime number and on the other there is a multiple of 4.
14. Two persons A and B throw a die alternately till one of them gets a 'three' and wins the game. Find their respective probabilities of winning, if A begins.
15. If $P(A) = 0.4$, $P(B) = 0.8$, $P(B/A) = 0.6$, find $P(A/B)$ and $P(A \cup B)$

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