**Assignment**

Q1. What is the probability of picking a card that was either red or black?

Q2. A problem in statistics is given to 5 students A, B, C, D, E. Their chances of solving it are ½,1/3,1/4,1/5,1/6. What is the probability that the problem will be solved?

Q3. A person is known to hit the target in 3 out of 4 shots whereas another person is known to hit the target in 2 out of 3 shots. Find the probability that the target being hit at all when they both try?

Q4. An investment consultant predicts that the odds against price of a certain stock will go up during the next week are 2:1 and the odds in the favor of the price remaining the same are 1:3.What is the probability that the price of the stock will go down during eth next week?

Q5. A bag contains 10 White and 6 Black balls. 4 balls are successfully drawn out and not replaced. What is the probability that they are alternately of different colors?

Q6.In a multiple-choice question there are 4 alternative answers, of which one or more are correct. A candidate will get marks in the question only if he ticks all the correct answers. The candidate decides to tick answers at random. If he is allowed up to 3 chances to answer the question, find the probability that he will get marks in the question?

Q7. A and B are two independent events. The probability that both occur simultaneously is 1/6 and the probability that neither occurs is 1/3. Find the probability of occurrence of event A and B separately?

Q8. Three screws are drawn at random from a lot of 10 screws containing 4 defective. Find the probability that all the 3 screws drawn are non-defective. Assuming the screws are drawn (i) With replacement

(ii) Without replacement

Q9. What is the probability that a leap year selected at random will contain 53 Sundays?

Q10. An article manufactured by a company consists of two parts A and B. In the process of manufacturing of Part A, 9 out of 100 are likely to be defective. Similarly, 5 out of 100 are likely to be defective in the manufacturing of Part B. Calculate the probability that the assembled part will not be defective.

Q11. Out of the numbers 1 to 120, one is selected at random. What is the probability that it is divisible by 8 or 10?

Q12.A company has a security system comprising of 4 electronic devices A, B, C& D which operate independently. Each device has a probability of failure is 0.1.The four electronic devices are arranged so that the whole system operates properly if at least one of A and B functions and at least one of the C and D function.

Q13. an urn contains 4 tickets numbered 1,2,3,4 and another urn contains 6 tickets numbered 2,4,6,7,8,9. If one of the two urns are chosen at random and a ticket is drawn at random from the chosen urn, find the probabilities that the ticket drawn bears the number (i) 2 or 4 (ii) 3 (iii) 1 or 9.

Q14. The probability that trainee will remain with a company is 0.6.the probability that an employee earns more than Rs. 10,000 per month is 0.5. The probability that an employee who is a trainee remained with the company or who earns more than Rs. 10,000 per month is 0.7.What is the probability that an employee earns more than Rs 10,000 per month given that he is a trainee who stayed with the company?

Q15.The odds against student x solving a business Statistics problem are 8:6 and odds in favor of student Y solving the problem are 14:16.

1. What is the chance that the problem will be solved if they both try independently of each other?
2. What is the probability that none of them is able to solve the problem?

Q16. A fair die is tossed twice. Find the probability of getting A 4, 5 or 6 on the first toss and A 1,2,3 or 4 on second toss.

Q17. A bag contains 5 White and 8 Red balls. Two drawings of 3 balls are made such that

1. The balls are replaced before the second trial.
2. The balls are not replaced before the second trial.

Find the probability that the first drawing will give 3 white and second will give 3 balls in each case.

Q18. One bag contains 4 White and 2 Black balls. Another bag contains 3White and 5 Black balls. If one ball is drawn from each bag, find the probability that

1. Both are white
2. Both are black.
3. One is white and one is black.

Q19.The data for the promotion and academic qualification of a company is given below:-

|  |  |  |  |
| --- | --- | --- | --- |
| Promotional status | MBA | Non-MBA | Total |
| Promoted | 0.14 | 0.26 | 0.40 |
| Non Promoted | 0.21 | 0.39 | 0.60 |
| Total | 0.35 | 0.65 | 1.00 |

1. Calculate the conditional probability of promotion after an MBA has been identified?
2. Calculate the conditional; probability that it is an MBA when a promoted employee has been chosen?
3. Find the probability that a promoted employee was an MBA?

Q20. A candidate is selected fro interviews for three posts. For the first there are 3 candidates, for the second there are 4, and fro the third there are 2.What is the probability of his getting selected for at least one post?