Problem Set - IV

1. The digits 1, 2, 3, 4, 5, 6, 7, 8, 9 are written in random order to form a nine digit number. Find the probability that this number is divisible by 4.
2. A fair coin is tossed repeatedly. If tail appears on first four tosses, then the probability of head appearing on fifth toss equals
3. 20 girls, among whom are A and B sit down at a round table. The probability that there are 4 girls between A and B is
4. Two integers x and y are chosen with replacement out of the set $\{0, 1, 2, 3, ..., 10\}$. Then the probability that $|x - y| > 5$ is
5. If 6 objects are distributed at random among 6 persons, the probability that at least one of them will not get any thing is
6. Three persons A, B and C are to speak at a function along with 4 other persons, if they all speak in random order, the probability that A speaks before B and B speaks before C is
7. A speaks truth is 60% cases and B speaks truth in 80% cases. The probability that they will say the same thing while describing a single event is
8. Two squares are chosen at random on a chessboard, the probability that they have a side in common is
9. The probability that a leap year selected at random contains either 53 Sundays or 53 Mondays is
10. Seven digits from the numbers 1, 2, 3, 4, 5, 6, 7, 8 and 9 are written in random order. The probability that this seven digit number is divisible by 9 is
11. What is the probability that four S's come consecutively in the word MISSISSIPPI?
12. A consignment of 15 wristwatches contains 4 defectives. The wristwatches are selected at random, one by one and examined. The one examined are not put back. What is the probability that ninth one examined is the last defective?

13. A pack of cards consists of 9 cards numbered 1 to 9. Three cards are drawn at random with replacement. Then the probability of getting 1 even and 2 odd numbered cards is

14. A letter is taken at random from ASSISTANT and another is taken out from STATISTICS. The probability that they are the same letter is

15. A man takes a step forward with probability 0.4 and backward with probability 0.6. The probability that at the end of eleven steps he is one step away from the starting point is

Answers:

1. $\frac{2}{9}$, 2. $\frac{1}{2}$, 3. $\frac{2}{19}$, 4. $\frac{30}{121}$, 5. $\frac{6^6-6!}{6^6}$, 6. $\frac{1}{6}$, 7. 0.56, 8. $\frac{1}{18}$, 9. $\frac{3}{7}$, 10. $\frac{1}{9}$, 11. $\frac{4}{165}$, 12. $\frac{8}{195}$, 13. $\frac{100}{243}$, 14. $\frac{19}{90}$, 15. $11C_6(0.24)^5$.