ALL BRANCHES Hinglish

Subject: Engineering Mathematics

DPP-01

Chapter: Probability

Topic : Fundamentals of Probability

1. If there are 6 girls and 5 boys who sit in a row. then the probability that no two boys sit together is

(a) $\frac{6!6!}{2!11!}$ (b) $\frac{7!5!}{2!11!}$

(c) $\frac{6!7!}{2!11!}$ (d) None of these

2. Twelve balls are distributed among three axes. The probability that the first box contains 3 balls is

(a) $\frac{110}{9}\left(\frac{2}{3}\right)^9$ (b) $\frac{9}{110}\left(\frac{2}{3}\right)^{10}$

(c) $\frac{^{12}C_3}{12^3}\cdot 2^9$ (d) $\frac{^{12}C_3}{3^{12}}$

3. A cricket club has 15 members of whom only 5 can bowl. If the names of 15 members are put into a box and 11 are drawn at random. Then the probability of obtaining an eleven containing at least 3 bowlers Is:

(a) 7/13 (b) 6/13

(c) 11/15 (d) 12/13

4. Three integers are chosen at random from the first 20 integers. The probability that their product is even

(a) 2/19 (b) 3/29

(c) 17/19 (d) 4/29

5. One hundred cards are numbered from 1 to 100. The probability that a randomly chosen card has a digit 5 is

(a) 1/100 (b) 9/100

(c) 19/100 (d) None of these

6. Three six faced dice are tossed together, then the probability that exactly two of the three numbers are equal is:

(a) 165/216 (b) 177/216

(c) 51/216 (d) 90/216

7. If the letters of word 'REGULATIONS' be arranged at random, the probability that there will be exactly 4 letters between R and E is:

(a) 6/55 (b) 3/55

(c) 49/55 (d) None of these

8. $2n$ boys are randomly divided into two subgroups containing n boys each. The probability that the two tallest boys are in different groups is:

(a) $\frac{n}{2n-1}$ (b) $\frac{n-1}{2n-1}$

(c) $\frac{2n-1}{4n^2}$ (d) None of these

9. In a bag there are three tickets numbered 1, 2, 3. A ticket is drawn at random and put back, and this is done four times the probability of that the sum of the numbers is even is:

(a) 41/81 (b) 39/81

(c) 40/81 (d) None of these

10. A pack of cards consists of 15 cards numbered 1 to 15. Three cards are drawn at random with replacement. Then, the probability of getting 2 odd and one even numbered card is:

(a) 348/1125 (b) 398/1125

(c) 448/1125 (d) 498/1125

11. Three persons A, B and C are to speak at a function along with five others. If they all speak in random order, the probability that A speaks before B and B speaks before C is:

(a) 3/8 (b) 1/6

(c) 3/5 (d) None of these

12. An elevator starts with m passengers and stops at n floors ($m \le n$) the probability that no two passengers alight at same floor is:

(a) $\frac{{}^{n}P_{m}}{m^{n}}$ (b) $\frac{{}^{n}P_{m}}{n^{m}}$

(c) $\frac{{}^{n}C_{m}}{m^{n}}$ (d) $\frac{{}^{n}C_{m}}{n^{m}}$

13. There are n persons sitting in a row. Two of them are selected at random. The probability that two selected persons are not together is:

(a) $\frac{2}{n}$ (b) $1-2/n$

(c) $\frac{n(n-1)}{(n+1)(n+2)}$ (d) None of these

14. A and B play a game where each is asked to select a number from 1 to 25. If the two numbers match both of them win a prize. The probability that they will not win a prize in a single trial is:

(a) 1/25 (b) 24/25

(c) 2/25 (d) None of these

15. Fifteen persons among whom are A and B, sit down randomly at round table. The probability that there are 4 persons between A and B is:

(a) $\frac{9!}{14!}$ (b) $\frac{10!}{14!}$

(c) $\frac{9!}{15!}$ (d) None of these

16. The probability that the 13th day of a randomly chosen month is a second Saturday is:

(a) 1/7 (b) 1/12

(c) 1/84 (d) 19/84

17. Three of the six vertices of a regular hexagon are chosen at random. The probability that the triangle with three vertices is equilateral, is:

(a) 1/2 (b) 1/5

(c) 1/10 (d) 1/20

18. The probability that out of 10 persons, all born in April, at least two have the same birthday is:

(a) $\frac{{}^{30}C_{10}}{(30)^{10}}$ (b) $1-\frac{{}^{30}C_{10}}{30!}$

(c) $\frac{(30)^{10}-{}^{30}C_{10}}{(30)^{10}}$ (d) None of these

❐❐❐

Answer Key

1. (c)
2. (a)
3. (d)
4. (c)
5. (c)
6. (d)
7. (a)
8. (a)
9. (a)
10. (c)
11. (b)
12. (a)
13. (b)
14. (b)
15. (d)
16. (c)
17. (c)
18. (c)

❐❐❐