

## 15. PROBABILITY

### 4 MARK QUESTIONS

1. Two dice are thrown at the same time. Find the probability that the sum of the two numbers appearing on the top of the dice is

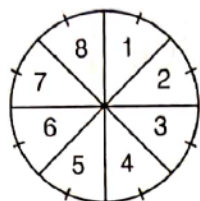
- (i) 8
- (ii) 13
- (iii) less than or equal to 12
- (iv) lowest prime number.

2. From a pack of 52 playing cards jacks, queens, kings and aces of red colour are removed. From the remaining, a card is drawn at random. Find the probability that the card is drawn is

- (i) a black queen
- (ii) a red card
- (iii) a ten
- (iv) a picture card/jack, queens and kings are picture cards.

3. A game of chance consists of spinning an arrow which comes to rest pointing at one of the numbers 1,2,3,4,5,6,7 and 8 (see the figure) and these are equally likely outcomes. What is the probability that it will point at

- (i) 8 ?
- (ii) an odd number?
- (iii) a number greater than 2 ?
- (iv) a number less than 9 ?



4. Two dice (each bearing numbers 1 to 6) are rolled together. Find the probability that the sum of the numbers of the upper most faces of two dice is

- (i) 4 or 5
- (ii) 7,8 or 9
- (iii) between 5 and 8
- (iv) more than 10.

5. From a well-shuffled deck of 52 cards, one card is drawn. Find the probability that the card drawn is

- (i) a queen of colour black.
- (ii) a card with number 5 or 6.
- (iii) a card with number less than 8.
- (iv) a card with number between 2 and 9.

6. Out of the pack of 52 playing cards, two black kings and 4 red cards (not king) are removed. A card is drawn at random. Find the probability that the card is drawn is

- (i) a black jack
- (ii) a black queen
- (iii) a black card
- (iv) a king.

7. Cards marked with the numbers 2 to 101 are placed in a box and mixed thoroughly. One card is drawn from this box. Find the probability that the number on the card is

- (i) an even number
- (ii) a number less than 14
- (iii) a number which is a perfect square.
- (iv) a prime number less than 20

8. A card is drawn from a well-shuffled pack of 52 cards. Find the probability that the card drawn is

- (i) 5 of heart or diamond
- (ii) jack or queen
- (iii) ace and king
- (iv) a red or a king

9. Cards numbered 1,2,3,4,5,..., 17 are put in a box and mixed thoroughly. One person draws a card from the box. Find the probability that the number on the card is

- (i) an odd number
- (ii) a prime number
- (iii) divisible by 2 and 3 both
- (iv) a multiple of 3 or 5.

10. In a game, the entry fee is Rs. 5. The game consists of tossing a coin 3 times. If one or two heads show, Sweta gets her entry fee back. If she throws 3 heads, she receives double the entry fees. Otherwise she will lose. For tossing a coin three times, find the probability that she

- (i) loses the entry
- (ii) gets double entrée fee
- (iii) just gets her entry fee.

11. A box contains 80 discs which are numbered from 1 to 80. If one disc is drawn at random from the box, find the probability that it bears

- (i) a two-digit number
- (ii) a perfect square number
- (iii) a number divisible by 5

12. A game of chance consists of spinning an arrow on a circular board, divided into 8 equal parts, which comes to rest pointing at one of the numbers 1,2,3...8(see the figure) , which are equally likely outcomes. What is the probability that the arrow will point at

- (i) an odd number?
- (ii) a number greater than 3 ?

- (iii) a number less than 9 ?
- (iv) a number greater than 3 and less than 7?



13. Cards numbered from 11 to 60 are kept in a box. If a card is drawn at random from the box, find the probability that the number on the drawn card is

- (i) an odd number.
- (ii) a perfect square number
- (iii) divisible by 5
- (iv) a prime number less than 20

14. A committee of 35 members is formed from 25 men and 10 women . To elect a chairperson, the names of all embers are written on the cards and put in a box. One card is then drawn from the box. What is the probability that the name written on the card is that of

- (i) a men
- (ii) a women
- (iii) check whether the sum of these probabilities is 1 or not.

15. 17 cards numbered 1,2,3,..., 16, 17 are put in a box and mixed thoroughly. One person draws a card from the box. Find the probability that the number on the card is

- (a) odd
- (b)a prime
- (c)divisible by 3
- (d)divisible by 3 and 2 both

### ANSWERS

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|--|---|
| 1. (i) $5/36$ (ii) 0 (iii) 1 (iv) $1/36$           | 2. (i) $1/22$ (ii) $9/22$ (iii) $1/11$ (iv) $3/22$  |
| 3. (i) $1/8$ (ii) $1/2$ (iii) $3/4$ (iv) 1         | 4. (i) $7/36$ (ii) $5/12$ (iii) $11/36$ (iv) $1/12$ |
| 5. (i) $1/26$ (ii) $2/13$ (iii) $6/13$ (iv) $6/13$ | 6. (i) $1/23$ (ii) $1/23$ (iii) $12/23$ (iv) $1/23$ |
| 7. (i) $1/2$ (ii) $3/25$ (iii) $9/100$ (iv) $2/25$ | 8. (i) $1/26$ (ii) $2/13$ (iii) 0 (iv) $7/13$       |
| 9. (i) $9/17$ (ii) $7/17$ (iii) $2/17$ (iv) $7/17$ | 10. (i) $1/8$ (ii) $1/8$ (iii) $3/4$                |
| 11. (i) $71/80$ (ii) $1/10$ (iii) $1/5$            | 12. (i) $1/2$ (ii) $5/8$ (iii) 1 (iv) $3/8$         |
| 13. (i) $1/2$ (ii) $2/25$ (iii) $1/5$ (iv) $2/25$  | 14. (i) $5/7$ (ii) $2/7$ (iii) Yes                  |
| 15. (a) $9/17$ (b) $7/17$ (c) $5/17$ (d) $2/17$    |   |

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