

# SRI RAGHAVENDRA TUITION CENTER

CENTUM - 5 MARK - UNIT - 8 PROBABILITY

10th Standard

Maths

Date : 29-Mar-24

Reg.No. :

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Exam Time : 02:00:00 Hrs

Total Marks : 100

20 x 5 = 100

## I. ANSWER ALL QUESTION

- 1) A bag contains 5 blue balls and 4 green balls. A ball is drawn at random from the bag. Find the probability that the ball drawn is (i) blue (ii) not blue.
- 2) Two dice are rolled. Find the probability that the sum of outcomes is (i) equal to 4 (ii) greater than 10 (iii) less than 13.
- 3) A bag contains 6 green balls, some black and red balls. Number of black balls is as twice as the number of red balls. Probability of getting a green ball is thrice the probability of getting a red ball. Find (i) number of black balls (ii) total number of balls.
- 4) A bag contains 12 blue balls and x red balls. If one ball is drawn at random (i) what is the probability that it will be a red ball? (ii) If 8 more red balls are put in the bag, and if the probability of drawing a red ball will be twice that of the probability in (i), then find x.
- 5) Two unbiased dice are rolled once. Find the probability of getting
  - (i) a doublet (equal numbers on both dice)
  - (ii) the product as a prime number
  - (iii) the sum as a prime number
  - (iv) the sum as 1
- 6) Three fair coins are tossed together. Find the probability of getting
  - (i) all heads
  - (ii) atleast one tail
  - (iii) atleast one head
  - (iv) atleast two tails
- 7) Two dice are numbered 1,2,3,4,5,6 and 1,1,2,2,3,3 respectively. They are rolled and the sum of the numbers on them is noted. Find the probability of getting each sum from 2 to 9 separately.
- 8) A bag contains 5 red balls, 6 white balls, 7 green balls, 8 black balls. One ball is drawn at random from the bag. Find the probability that the ball drawn is
  - (i) white
  - (ii) black or red
  - (iii) not white
  - (iv) neither white nor black
- 9) In a box there are 20 non-defective and some defective bulbs. If the probability that a bulb selected at random from the box found to be defective is  $\frac{3}{8}$  then, find the number of defective bulbs.
- 10) In a game, the entry fee is Rs.150. The game consists of tossing a coin 3 times. Dhana bought a ticket for entry. If one or two heads show, she gets her entry fee back. If she throws 3 heads, she receives double the entry fees. Otherwise she will lose. Find the probability that she (i) gets double entry fee (ii) just gets her entry fee (iii) loses the entry fee.
- 11) Two dice are rolled together. Find the probability of getting a doublet or sum of faces as 4.
- 12) If A and B are two events such  $P(A) = \frac{1}{4}$ ,  $P(B) = \frac{1}{2}$  and  $P(A \text{ and } B) = \frac{1}{8}$ , find (i)  $P(A \text{ or } B)$  (ii)  $P(\text{not } A \text{ and not } B)$
- 13) In a class of 50 students, 28 opted for NCC, 30 opted for NSS and 18 opted both NCC and NSS. One of the students is selected at random. Find the probability that
  - (i) The student opted for NCC but not NSS.
  - (ii) The student opted for NSS but not NCC.
  - (iii) The student opted for exactly one of them.
- 14) Three unbiased coins are tossed once. Find the probability of getting atleast 2 tails or atleast 2 heads.

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- 15) The probability that a person will get an electrification contract is  $\frac{3}{5}$  and the probability that he will not get plumbing contract is  $\frac{5}{8}$ . The probability of getting atleast one contract is  $\frac{5}{7}$ . What is the probability that he will get both?
- 16) A coin is tossed thrice. Find the probability of getting exactly two heads or atleast one tail or consecutive two heads.
- 17) If A, B, C are any three events such that probability of B is twice as that of probability of A and probability of C is thrice as that of probability of A and if  $P(A \cap B) = \frac{1}{6}$ ,  $P(B \cap C) = \frac{1}{4}$ ,  $P(A \cap C) = \frac{1}{8}$ ,  $P(A \cap B \cap C) = \frac{1}{15}$ ,  $P(A \cup B \cup C) = \frac{9}{10}$ , then find P(A), P(B) and P(C)?
- 18) If two dice are rolled, then find the probability of getting the product of face value 6 or the difference of face values 5.
- 19) Addition Theorem of Probability
- i) If A and B are any two events then  

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$
- (ii) If A,B and C are any three events then  

$$P(A \cup B \cup C) = P(A) + P(B) + P(C) - P(A \cap B) - P(B \cap C) - P(A \cap C) + P(A \cap B \cap C)$$
- 20) What will be the probability that a non leap year will have 53 Saturdays?

**ALL THE BEST**

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