Date : 02-Feb-23

Exam Time : 00:02:00 Hrs

Reg.No. : ☐☐☐☐☐☐

Total Marks : 30

7 x 2 = 14

1) The probability of selecting a red ball at random from a jar that contains only red, blue and orange balls is $\frac{1}{4}$ . The probability of selecting a blue ball at random from the same jar is $\frac{1}{3}$ . If the jar contains 10 orange balls, find the total number of balls in the jar.

2) A card is drawn at random from a well-shuffled pack of 52 cards. Find the probability of getting

   (i) a red king

   (ii) a queen or a jack.

3) Two dice are thrown simultaneously.Find the probability that the sum of the two numbers appearing on the top is less than or equal to 10.

4) A box contains cards numbered from 1 to 17.If one card is drawn at random from the box, find the probability that it bears a prime number.

5) A bag contains slips numbered from 1 to 100. If Fatima chooses a slip at random from the bag, it will either be an odd number or an even number. Since this situation has only two possible outcomes, so, the probability of each is $\frac{1}{2}$ . Justify.

6) In a bag-A, there are four cards numbered 1,3,5 and 7 respectively.In another bag-B, there are three cards numbered 2, 4 and 6 respectively.A card is drawn at random from each bag.

   (i)Write the possible outcomes i.e., sample  space

   (ii)Find the probability that the sum of these two cards drawn is:

   (a)7

   (b)even

   (c)odd

   (d)more than 7

7) In a survey it was found that 50% people use petrol, 30% use diesel; and remaining use CNG for their vehicles.Find the probability that a person chosen at random uses CNG.

   (a)Which fuel out of the above three is appropriate for the welfare of the society?

3 x 3 = 9

8) A box contains 35blue, 25 white and 40 red marbles.If a marble is drawn at random from the box, find the probability that the drawn marble is:

   (iWhite

   (ii)Not blue

   (iii)Neither white nor blue

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) Two coins are tossed simultaneously. Find the probability of getting

   (i) exactly two head

   (ii) atleast one head

2 x 4 = 8

11) In a game, the entry fee is Rs. 5. The game consists of tossing a coin 3 times. If one or two heads show, Shweta 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 fee

   (ii) gets double entry fee

   (iii) just gets her entry fee

12) An urn consists of 100 identical tokens on which 1 to 100 are marked.One token is drawn.What is the probability that the number on token is:

(i)Less than 33

(ii)AA multiple of 5

(iii)AN even number

(iv)A multiple of 2 and 3