Important Questions - Probability

9th Standard CBSE

Mathematics

Reg.No. : ☐☐☐☐☐☐

Time : 01:00:00 Hrs

Total Marks : 50

Section-A

1) The minimum probability of an event is   **1**

   (a) 0   (b) 1   (c) $\frac{1}{2}$ (d) -1

2) An experiment has two outcomes E and F P(E)+P(F) is equal to: **1**

   (a) 1   (b) 0   (c) 2   (d) $\frac{1}{2}$

3) Which of the following cannot be the experiment probability of an event?   **1**

   (a) $\frac{15}{100}$ (b) $\frac{3}{2}$ (c) 0.17   (d) $\frac{6}{17}$

4) A coin is tossed 100 times with the following frequencies: **1**

   Head:75, Tail: 25

   Find the probability of getting a head.

   (a) $\frac{1}{4}$ (b) $\frac{1}{2}$ (c) $\frac{3}{4}$ (d) 1

5) A coin is tossed once, then the probability of getting tail is: **1**

   (a) 1   (b) $\frac{1}{2}$ (c) 2   (d) $\frac{1}{3}$

6) In a survey of 350 women, 132 were found to be working. If a woman is selected at random, the probability that   **1**
   she is not working is:

   (a) $\frac{66}{175}$ (b) $\frac{109}{175}$ (c) $\frac{43}{175}$ (d) 1

7) Two coins are tossed simultaneously 1000 times and we get   **1**

   Two heads: 200 times

   One head: 600 times

   No head: 200 times

   Find the probability of getting no head is

   (a) $\frac{1}{5}$ (b) $\frac{1}{2}$ (c) $\frac{1}{4}$ (d) 1

8) Ten cards numbered 1,2, ... , 10 are put in a box. If a card is drawn at random, then the probability that the card   **1**
   drawn is a prime number is:

   (a) $\frac{7}{10}$ (b) $\frac{3}{5}$ (c) $\frac{2}{5}$ (d) $\frac{1}{2}$

9) The probability of guessing the correct answer to a certain question is $\frac{x}{2}$. If the probability of not guessing the   **1**
   correct answer to the question is $\frac{2}{3}$, then x=..............

   (a) $\frac{4}{3}$ (b) $\frac{3}{4}$ (c) $\frac{2}{3}$ (d) $\frac{1}{3}$

10) The blood groups of 30 students of Class VIII are recorded as follows: A,B,O,O,AB,O,A,O,B,A,O,B,A,O,O, A,AB,O,A,A,O,O,AB,B,A,O,B,A,B,O. Find the probability that a student of Class VIII selected at random has his blood group AB.

(a) $\frac{1}{10}$ (b) $\frac{1}{5}$ (c) $\frac{1}{6}$ (d) $\frac{1}{3}$

1

Section-B

11) In a group of 70 persons, there are 15 boys, 20 girls, 30 men and rest women. Find the probability that a selected person is a woman.

2

12) In a cricket match, a batsman hits boundary in 20% of the balls he played. Find the probability that he did not hit a boundary.

2

13) A die was rolled 100 times and the number of times 6 came up was noted. If the experimental probability calculated from this information is $\frac{2}{5}$ then how many times 6 came up? Justify your answer.

2

14) A coin is tossed 1000 times with the following frequencies:

Head: 455, Tail: 545

Compute the probability for each event

2

15) A die is thrown. Find the probability of getting an odd number.

2

16) The record of a weather station shows that out of the past 250 consecutive days, its weather forecasts were correct 175 times:

(i) What is the probability that on a given day it was correct?

(ii) What is the probability that it was not correct on a given day?

2

17) Two coins are tossed simultaneously 500 times, and we get

Result	2 heads	1 head	No head
Frequency	105	275	120

Find the probability of occurrence of

(i) two heads

(il) all tails.

2

18) A bag has 3 red and 7 black balls. One ball is taken out of the bag. Find the probability that it is a

(i) red ball

(ii) blackball.

2

19) Cards marked with numbers 2, 3, 4, ..., 61 are placed in a box and mixed thoroughly. One card is drawn. Find the probability that card drawn is

(i) an even number

(ii) a square number

2

20) A bag contains 190 coins out of which, fifty Rs 2 coins, forty Rs 1 coins and rest Rs 5 coins. One coin is selected at random. Find the probability that it is a Rs 5 coin.

2

Section-C

21) Out of the past 250 consecutive days, its weather forecasts were correct 175 times.

(i) What is the probability that on a given day it was correct?

(ii) What is the probability that it was not correct on a given day?

5

22) On a particular day, the number of vehicles through a crossing is given below:

Vehicle	Frequency
Two-wheeler	57
Three-wheeler	33
Four-wheeler	30

A particular vehicle is chosen at random. What is the probability that it is not a four-wheeler?

5

23) Cards marked with 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

(a) a number less than 14

(b) a number which is a perfect square

(e) a prime number less than 20

5

24) The king, queen, and jack of clubs are removed from a deck of 52 cards and then well shuffled. One card js selected at random from the remaining cards. Find the probability of getting

(a) a heart

(b) a king

(c) the 10 of hearts.

5

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Section-A

1) (a) 0

1

2) (a) 1

1

3) (b) $\frac{3}{2}$

1

4) (c) $\frac{3}{4}$

1

5) (b) $\frac{1}{2}$

1

6) (b) $\frac{109}{175}$

1

7) (a) $\frac{1}{5}$

1

8) (c) $\frac{2}{5}$

1

9) (c) $\frac{2}{3}$

1

10) (a) $\frac{1}{10}$

1

Section-B

11) No of women=70-15(+20+30)

=5

P(women)=$\frac{5}{70} = \frac{1}{14}$

2

12) Hits boundary=20% of balls

Does not hit boundarty=80% of balls

∴P(not hitting boundary)=$\frac{80}{100} = \frac{4}{5}$

2

13) 40

2

14) Probability of getting head $= \frac{255}{1000} = \frac{91}{200}$

    Probability of getting tail $= \frac{109}{200}$ **2**

15) $\frac{1}{2}$ **2**

16) (i) 0.7   (ii) 0.3   **2**

17) $(i) \frac{21}{100}$ $(ii) \frac{6}{25}$ **2**

18) $(i) \frac{3}{10}$ $(ii) \frac{7}{10}$ **2**

19) $(i) \frac{1}{2}$ $(ii) \frac{1}{10}$ **2**

20) $\frac{10}{19}$ **2**

Section-C

21) Total number of days = 250   **5**

    (i) Number of days on which the weather forecasts were correct = 175

    Probability that on a given day it was correct $= \frac{175}{250} = \frac{7}{10}$

    (ii) Probability that it was not correct on a given day $= 1 - \frac{7}{10} = \frac{3}{10}$

22) Number of two wheelers = 57   **5**

    Number of three wheelers = 33

    Number of four wheelers = 30

    Total number of vehicles = 57 + 33 + 30 = 120

    Number of vehicles that is not a four-wheeler = 57 + 33 = 90

    Probability that the vehicle chosen at random is not a four-wheeler

    $\frac{90}{120} = \frac{3}{4}$

23) Total number of cards in the box = 100   **5**

    (a) Numbers less than 14 are 2,3,4,5,6,7,8,9,10,11,12,13

    Their number = 12

    Probability that the number on the card is a number less than 14

    $= \frac{12}{100} = \frac{3}{25}$

    (b) Perfect square numbers are 4,9,16,25,36,49,64,81,100

    Their number = 9

    Probability that the number on the card is a number which is a perfect square

    $= \frac{9}{100}$

    (c) Prime numbers less than 20 are 2,3,5,7,11,13,17,19

    Their number = 8

    Probability that the number on the card is a prime number less than 20

    $= \frac{8}{100} = \frac{2}{25}$

24) Total number of cards in the deck when king, queen, and jack of clubs are removed

=52-3=49

(a) Number of cards which are 'a heart' = 13

Probability of getting a heart $=\frac{13}{49}$

(b) Number of cards which are 'a king' = 3

Probability of getting a king $=\frac{3}{49}$

(c) Number of cards which are 'the 10 of hearts' = 1

Probability of getting 'the 10 of hearts' = $\frac{1}{49}$