NCERT Solutions Class 11 Maths
Chapter 14: Probability
Miscellaneous Exercise on Chapter 14

Complete Solutions

Question 1

QUESTION

A box contains 10 red marbles, 20 blue marbles and 30 green marbles. Five marbles are drawn from the box, what is the probability that

(i) all will be blue?

(ii) at least one will be green?

ANSWER

(i) $^{20}C_5{}^{60}C_5$

(ii) $1 - {}^{30}C_5{}^{60}C_5$

Question 2

QUESTION

Four cards are drawn from a well–shuffled deck of 52 cards. What is the probability of obtaining 3 diamonds and 1 spade?

ANSWER

$^{13}C_3 \cdot {}^{13}C_1{}^{52}C_4$

Question 3

A die has two faces each with number 1, three faces each with number 2 and one face with number 3. If the die is rolled once, determine

(i) P(2)

(ii) P(1\text or 3)

(iii) P(\textnot 3)

ANSWER

(i) $(1)/(2)$

(ii) $(1)/(2)$

(iii) $(5)/(6)$

Question 4

In a certain lottery 10,000 tickets are sold and ten equal prizes are awarded. What is the probability of not getting a prize if you buy

(a) one ticket

(b) two tickets

(c) ten tickets?

ANSWER

(a) $(999)/(1000)$

(b) $^{9990}C_2 {}^{10000}C_2$

(c) $^{9990}C_{10} {}^{10000}C_{10}$

Question 5

QUESTION

Out of 100 students, two sections of 40 and 60 are formed. If you and your friend are among the 100 students, what is the probability that

(a) you both enter the same section?

(b) you both enter different sections?

ANSWER

(a) (17)/(33)

(b) (16)/(33)

Question 6

QUESTION

Three letters are dictated to three persons and an envelope is addressed to each of them. The letters are inserted into the envelopes at random so that each envelope contains exactly one letter. Find the probability that at least one letter is in its proper envelope.

ANSWER

(2)/(3)

Question 7

A and B are two events such that P(A)=0.54, P(B)=0.69 and P(A\cap B)=0.35. Find

(i) P(A\cup B)

(ii) P(A'\cap B')

(iii) P(A\cap B')

(iv) P(B\cap A').

ANSWER

(i) 0.88

(ii) 0.12

(iii) 0.19

(iv) 0.34

Question 8

From the employees of a company, 5 persons are selected to represent them in the managing committee of the company. The particulars of these five persons are:

Harish (M, 30 years), Rohan (M, 33 years), Sheetal (F, 46 years), Alis (F, 28 years), Salim (M, 41 years).

A person is selected at random from this group to act as a spokesperson. What is the probability that the spokesperson will be either male or over 35 years?

ANSWER

(4)/(5)

Question 9

QUESTION

If 4-digit numbers greater than 5000 are randomly formed from the digits 0, 1, 3, 5 and 7, what is the probability of forming a number divisible by 5 when

(i) the digits are repeated?

(ii) the repetition of digits is not allowed?

> **ANSWER**
>
> (i) $(33)/(83)$
>
> (ii) $(3)/(8)$

Question 10

QUESTION

The number lock of a suitcase has 4 wheels, each labelled with ten digits, i.e. from 0 to 9. The lock opens with a sequence of four digits with no repeats. What is the probability of a person getting the right sequence to open the suitcase?

> **ANSWER**
>
> $(1)/(5040)$

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