

CHAPTER 15

Probability

Example:

Cards marked with numbers 1 to 100 are placed in a bag and mixed. One card is drawn at random. Find the probability that the number on the card is,

(i) A number, which is a perfect square.

(ii) A prime number less than 20.

Sol.

Let 'S' be the sample space that, a bag contains cards marked from 1 to 100 $\Rightarrow n(S) = 100$

(i) Let 'E₁' be the event of getting a number which is a perfect square = {1, 4, 9, 16, 25, 36, 49, 64, 81, 100}

$\Rightarrow n(E_1) = 10$

$$\Rightarrow P(E_1) = \frac{n(E_1)}{n(S)} = \frac{10}{100}$$

$$\therefore \boxed{P(E) = \frac{1}{10}}$$

(ii) Let ' E_2 ' be the event of getting that a prime number less than 20 = {2, 3, 5, 7, 11, 13, 17, 19} $\Rightarrow$
 $n(E_2) = 8$

$$\therefore P(E_2) = \frac{n(E_2)}{n(S)}$$

$$P(E_2) = \frac{8}{100}$$

$$\therefore P(E_2) = \frac{2}{25}$$

