

## Assignment 1.6

Q 2 balls are drawn at random in succession without replacement from an urn containing 4 red balls and 6 black balls.

(sol) Given total balls = 10  
Red balls = 4  
Black balls = 6

Probability of drawing one red ball ( $\frac{1}{5}$ )

These are the possible outcomes  
(Red, Red), (Red, Black) (Black, Red)

(Black, Black)

$$\binom{2}{\frac{4}{10}} \binom{1}{\frac{3}{9}} \rightarrow \text{Probability of 2 red balls}$$

$$\text{like wise} \rightarrow \frac{2}{15} \rightarrow RR$$

$$RB \quad \binom{2}{\frac{4}{10}} \binom{1}{\frac{4}{9}} \quad \frac{4}{15} \rightarrow RB$$

$$BR \quad \binom{1}{\frac{6}{10}} \binom{1}{\frac{4}{9}} \quad \frac{4}{15} \rightarrow BR$$

$$BB \quad \binom{1}{\frac{6}{10}} \binom{1}{\frac{5}{9}} \quad \frac{1}{5} \rightarrow BB$$

$$\therefore \text{Total No. of possible outcomes} \quad \frac{2}{15} + \frac{4}{15} + \frac{4}{15} + \frac{1}{5} = 1$$