10.13.3.31 An integer is chosen between 0 and 100. What is the possibility that it is
(i) divisible by 7?
(i) not divisible by 7?
Solution: Let $P_r(A)$ be the probability of chosen integer being divisible by 7. Sample space

$$= (1, 2, ..., 100) \tag{1}$$

Numbers in sample space divisible by 7

$$= (7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98) \tag{2}$$

Number of favourable outcomes

$$= 14 \tag{3}$$

$$P_r(A) = \frac{\text{Number of favourable outcomes}}{\text{Total outcomes}} \tag{4}$$

$$= \frac{14}{100} \tag{5}$$

$$= \frac{7}{50} \tag{6}$$

$$\tag{7}$$

(ii). Probability that chosen integer is not divisible by 7

$$= 1 - P(A) \tag{8}$$

$$= 1 - \frac{7}{50} \tag{9}$$

$$= \frac{43}{50} \tag{10}$$