

Assignment-4

EE22BTECH11012-A.Chhatrapati

Question 11.16.3.18)In a non-leap year, the probability of having 53 tuesdays or 53 wednesdays is

Solution: A non-leap year has a total of 365 days, and a week has 7 days.

So it can be expressed as

$$365\text{days} = 52 \times 7 + 1\text{day} \quad (1)$$

\Rightarrow 52 tuesdays or wednesdays

Random variable X denotes the days of a week

$$p_X(k) = \frac{1}{7}; \quad (1 < k < 7) \quad (2)$$

So the probability of extra day being tuesday or wednesday is

$$p_X(3) + p_X(4) = \frac{1}{7} + \frac{1}{7} = \frac{2}{7} \quad (3)$$