

Question 12.13.3.98

EE22BTECH11051 - Sreekar Cheela

Question: If A and B are two independent events then $\Pr(AB) = \Pr(A) \cdot \Pr(B)$

Solution: Two events A and B are said to be independent if probability of one event occurring does not depend on the occurring of the other event.

Hence we can say;

$$\Pr(A|B) = \Pr(A) \quad (1)$$

but we also know that;

$$\Pr(A|B) = \frac{\Pr(AB)}{\Pr(B)} \quad (2)$$

Hence from (1) and (2) we can say that;

$$\Pr(A) = \frac{\Pr(AB)}{\Pr(B)} \quad (3)$$

$$\Pr(A) \cdot \Pr(B) = \Pr(AB) \quad (4)$$

Hence proved.