

Assignment 1

AI22BTECH11015

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Question 12.13.6.17:

If A and B are two events such that $P(A) \neq 0$ and $P\left(\frac{B}{A}\right) = 1$, then

$$(A) A \subset B$$

$$(B) B \subset A$$

$$(C) B = \phi$$

$$(D) A = \phi$$

solution:

Given that

$$P\left(\frac{B}{A}\right) = 1 \quad (1)$$

This gives

$$P\left(\frac{BA}{A}\right) = 1 \quad (2)$$

upon cross multiplication

$$P(BA) = P(A) \quad (3)$$

Then

$$BA = A \quad (4)$$

$$A \subset B \quad (5)$$

Hence, The correct option is (A).