

# 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  $P(B|A) = 1$ , then

1)  $A \subset B$

2)  $B \subset A$

3)  $B = \phi$

4)  $A = \phi$

### solution:

Given that

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

This gives

$$\frac{\Pr(BA)}{\Pr(A)} = 1 \quad (2)$$

upon cross multiplication

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

Then

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

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

Hence, The correct option is (A).