Related Problem with Solution :

17. If A and B are events such that $P(A|B) = P(B|A)$, then
A. $A \subset B$ but $A \neq B$
B. $A = B$
C. $A \cap B = \phi$
D. $P(A) = P(B)$

(17)

Given that $\qquad$ $P(A/B) = P(B/A)$.

$$P(A/B) = \frac{P(A \cap B)}{P(B)}$$ and

$$P(B/A) = \frac{P(A \cap B)}{P(A)}$$

$\therefore \quad \dfrac{P(A \cap B)}{P(B)} = \dfrac{P(A \cap B)}{P(A)}$

$\Rightarrow \quad P(A) = P(B)$

Option D