

Mathematical Reasoning - Class XI

Past Year JEE Questions

Questions

Question: 01

Which of the following is equivalent to the Boolean expression $p \wedge \sim q$?

- A. $\sim (q \rightarrow p)$
- B. $\sim p \rightarrow \sim q$
- C. $\sim (p \rightarrow \sim q)$
- D. $\sim (p \rightarrow q)$

Solutions

Solution: 01

Explanation

p	q	$\sim p$	$\sim q$	$p \rightarrow q$	$\sim (p \rightarrow q)$	$q \rightarrow p$	$\sim (q \rightarrow p)$
T	T	F	F	T	F	T	F
T	F	F	T	F	T	T	F
F	T	T	F	T	F	F	T
F	F	T	T	T	F	T	F

$p \wedge \sim q$	$\sim p \rightarrow \sim q$	$p \rightarrow \sim q$	$\sim (p \rightarrow \sim q)$
F	T	F	T
T	T	T	F
F	F	T	F
F	T	T	F

$$p \wedge \sim q \equiv \sim (p \rightarrow q)$$

Option (d)