

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

22. The following statement
 $(p \rightarrow q) \rightarrow [(\sim p \rightarrow q) \rightarrow q]$ is :

[Main 2017]

- (a) a fallacy
- (b) a tautology
- (c) equivalent to $\sim p \rightarrow q$
- (d) equivalent to $p \rightarrow \sim q$

Other options are not tautology.

22. (b) We have

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

\therefore It is tautology.