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Answer To The Question No. 25

for parts (a) and (b) we have the following table (column four for part (a), column for part (b))

$P$	$Q$	$\neg Q$	$P \rightarrow \neg Q$	$\neg P$	$\neg P \leftrightarrow Q$
T	T	F	F	F	F
T	F	T	T	F	T
F	T	F	T	T	T
F	F	T	T	T	F

for parts (c) and (d) we have (column six given)

$P$	$Q$	$P \rightarrow Q$	$\neg P$	$\neg P \leftrightarrow Q$	$(P \wedge Q) \vee (\neg P \wedge \neg Q)$
T	T	T	F	T	T
T	F	F	F	T	F
F	T	T	T	T	T
F	F	T	T	F	F

for (e) and (f)

$P$	$Q$	$P \leftrightarrow Q$	$\neg P \leftrightarrow Q$	$(P \leftrightarrow Q) \vee (\neg P \leftrightarrow Q)$	$\neg P \leftrightarrow Q$
T	T	T	F	T	T
T	F	F	T	T	F
F	T	F	T	T	F
F	F	T	F	T	T