assingment 5

giridharpaida1111

January 2021

1 Question

For any two statements p and q the negation of expression p $\bigvee$ (p $\bigwedge$ q) is:

1. $\sim$p $\bigwedge$ $\sim$q
2. p $\bigwedge$ q
3. p $\leftrightarrow$ q
4. $\sim$p $\bigvee$ $\sim$q

2 Solution

The negation of p $\bigwedge$ ($\sim$ p $\bigvee$ q) is $\sim$ (p $\bigwedge$ ($\sim$ p $\bigvee$ q)) $\sim$ (p $\bigwedge$ $\sim$ q) $\bigvee$ (p $\bigvee$ q),
we know that $p \bigvee \sim$ p = True
$\sim$ (T$\bigwedge$(p$\bigvee$q),we know that True V a=a
$\sim$ (p$\bigvee$q)
$\sim$ p$\bigwedge\sim$ q
hence proved

p	q	$\sim$ p	$\sim$ q	$\sim$ $(p \bigwedge q)$	$\sim(p \bigvee q)$	$(p \bigvee q))$	$\sim$ (p$\bigvee$ q)	$\sim$p$\bigwedge$ q
0	0	1	1	0	1	1	1	1
0	1	1	0	1	1	1	0	0
1	0	0	1	1	1	1	0	0
1	1	0	0	0	0	1	0	0