assingment 5

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January 2021

1 Introduction

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

1.$\sim$(p $\bigwedge$ $\sim$ q

2. p $\bigwedge$q

3. p rightarrow q

4.$\sim$(p$\bigvee$ q)

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),

weknow 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