08/Jan/2021

ABDUL RAFEH 104-2C DLD Homework

1in $F(A,B,C,D) = \Pi(0,2,4,8,10,12)$

Solution

	C+D	C+$\bar{D}$	$\bar{C}$+$\bar{D}$	$\bar{C}$+D
A+B	0	1	1	0
A+$\bar{B}$	0	1	1	1
$\bar{A}$+$\bar{B}$	0	1	1	1
$\bar{A}$+B	0	1	1	0

$\bar{A}+\bar{B}+\bar{C}+\bar{D}$
$\bar{A}+\bar{B}+C+\bar{D}$
$A+\bar{B}+C+\bar{D}$
$A+\bar{B}+\bar{C}+\bar{D}$
$\bar{B}$ $\bar{D}$

$\bar{A}+\bar{B}+\bar{C}+\bar{D}$
$\bar{A}+B+\bar{C}+\bar{D}$
$A+B+\bar{C}+\bar{D}$
$A+\bar{B}+\bar{C}+\bar{D}$
$\bar{C}$ $\bar{D}$

$= (\bar{B}+\bar{D})+(\bar{C}+\bar{D})$ Ans

2in $F(A,B,C,D) = \Pi(0,2,4,6,8,10,12,14,15)$

Solution

	C+D	C+$\bar{D}$	$\bar{C}$+$\bar{D}$	$\bar{C}$+D
A+B	0	1	1	0
A+$\bar{B}$	0	1	1	0
$\bar{A}$+$\bar{B}$	0	1	0	0
$\bar{A}$+B	0	1	1	0

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$A+B+C+D$
$A+\bar{B}+C+D$
$\bar{A}+\bar{B}+C+D$
$\bar{A}+B+\bar{C}+D$
$A+B+\bar{C}+D$
$A+\bar{B}+\bar{C}+D$
$\bar{A}+\bar{B}+\bar{C}+D$
$\underline{A+B+C+D}$

D

$\bar{A}+\bar{B}+\bar{C}+\bar{D}$
$\bar{A}+\bar{B}+\bar{C}+D$
$(\bar{A}+\bar{B}+\bar{C})$

$= (A+B+C)(D)$ Ans

3. in $F(A,B,C,D) = \Pi(0,1,2,3,12,13,14,15)$

Solution

	$C+D$	$C+\bar{D}$	$\bar{C}+\bar{D}$	$\bar{C}+D$
$A+B$	0	0	0	0
$A+\bar{B}$	1	1	1	1
$\bar{A}+\bar{B}$	0	0	0	0
$\bar{A}+B$	1	1	1	1

$A+B+C+D$
$A+B+C+\bar{D}$
$A+B+\bar{C}+D$
$A+B+\bar{C}+\bar{D}$
$\underline{A+B+\bar{C}+D}$

$A+B$

$\bar{A}+B+C+D$
$\bar{A}+\bar{B}+C+D$
$\bar{A}+B+\bar{C}+D$
$\bar{A}+\bar{B}+\bar{C}+D$
$\underline{\bar{A}+B+\bar{C}+D}$

$(A+B)(\bar{A}+B)$ Ans