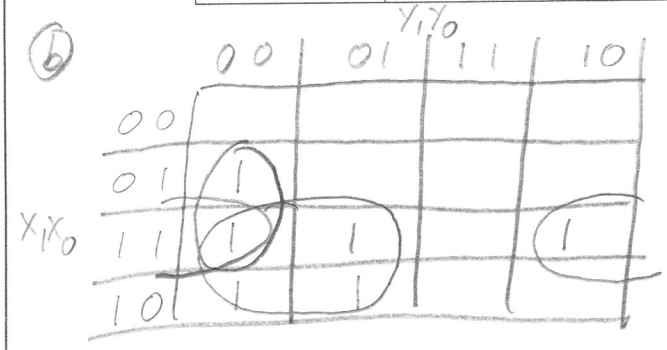
FORD TANG · C02122472	
PROBLEMS	PART II

(a)

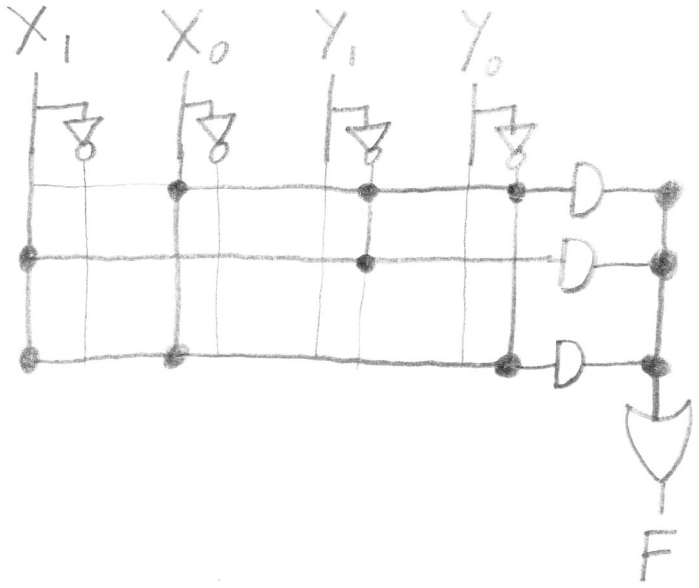
X_1	X_0	Y_1	Y_0	F
0	0	0	0	0
0	0	0	1	0
0	0	1	1	0
0	0	1	0	0
0	1	0	0	1
0	1	0	1	0
0	1	1	1	0
0	1	1	0	0
1	1	0	0	1
1	1	0	1	1
1	1	1	1	0
1	1	1	0	1
1	0	0	0	1
1	0	0	1	1
1	0	1	1	0
1	0	1	0	0

(b)



$$F(X_1, X_0, Y_1, Y_0) =$$
$$(X_0 \cdot Y_1' \cdot Y_0') + (X_1 \cdot Y_1') + (X_1 \cdot X_0 \cdot Y_0')$$

(c)



G242 - COMPUTER ARCHITECTURE AND ORGANIZATION	
HOMEWORK #	PROJECT 2

FORD TANG · C02122472	
SECTION	PART I
PROBLEMS	1, 2, 3

(1a) $ab_{16} = 1010\ 1011_2$

FLIP $\Rightarrow 0101\ 0100_2$

ADD 1 $\Rightarrow 0101\ 0101_2 = 1+4+16+64$

$= 85_{10}$

NEGATE $\Rightarrow -85_{10}$

(1b) $8f_{16} = 1000\ 1111_2$

FLIP $\Rightarrow 0111\ 0000_2$

ADD 1 $\Rightarrow 0111\ 0001_2 = 1+16+32+64$

$= 113_{10}$

NEGATE $\Rightarrow -113_{10}$

(2a) $-10_{10} \div 16 = 0$ REMAINDER 10

$\Rightarrow 000a_{16}$

FLIP $\Rightarrow fff5_{16}$

ADD 1 $\Rightarrow$ $fff6_{16}$

(2b) $4096 \div 16 = 256$ REMAINDER 0

$256 \div 16 = 16$ REMAINDER 0

$16 \div 16 = 1$ REMAINDER 0

$1 \div 16 = 0$ REMAINDER 1

$\Rightarrow$ 1000_{16}

(3a) $1111_{16} = 0001\ 0001\ 0001\ 0001$

$abcd_{16} = 1010\ 1011\ 1100\ 1101$ (+)

$1011\ 1100\ 1101\ 1110$

CF: 0 OF: 0

(3b) $0101_{16} = 0000\ 0001\ 0000\ 0001$

$8080_{16} = 1000\ 0000\ 1000\ 0000$ (+)

$1000\ 0001\ 1000\ 0001$

CF: 0 OF: 0

(3c) $0f0f_{16} = 0000\ 1111\ 0000\ 1111$

$048b_{16} = 0000\ 0100\ 1000\ 1011$ (+)

$0001\ 0011\ 1001\ 1010$

CF: 0 OF: 0