

IE1204 Digital Design Answer Form 2022-2023

Full Name		Personal Number		Program		
Exam 2023-04-12		YYYYMMDD-XXXX		NN		
#	Answer with	Answer				Points
1	Decimal number	85				1
2	8 bit two's complement binary number	0	1	1	1	1
3	8 bit two's complement binary number	1	0	1	1	1
4	Circuit number(s)	#4				1
5	Boolean expression, Y =	$A \cdot C \cdot D + \bar{A} \cdot \bar{C} \cdot D + B$				1
6	Boolean expression, Y =	$B \cdot \bar{C} + \bar{C} \cdot D + C \cdot \bar{D} = B \cdot \bar{C} + C \oplus D = (B + C + D)(\bar{C} + \bar{D})$				1
7	MUX connections, Boolean expression or Gate	$\overline{A \cdot B}$				1
	Row CD = 00	\bar{B}				
	Row CD = 01	$A \oplus B$				
	Row CD = 10	$A \cdot B$				
	Row CD = 11					
8	Timing diagram					1
9	Timing diagram					1
10	Propagation delay $t_{pd} \leq$	130		ps	1	
	Contamination delay $t_{cd} >$	30		ps		
11	Next state $Q_3 Q_2 Q_1 Q_0 =$	0011				1
12	Boolean expression or Gate, Y =	Q_2				1
13	16 bit two's complement hexadecimal Product A x B	P		19CC		1
14	8 bit two's complement hexadecimal Quotient (A / B) and Remainder	Q		R		1
		9		1		
15	8 result bits ($S_7 S_6 S_5 S_4 S_3 S_2 S_1 S_0$)	1	0	1	1	1
16	Shift register contents, 8 bits	1	0	0	1	1
TOTAL POINTS		Examiner sign				16