

IE1204 Digital Design Answer Form 2022-2023

Full Name		Personal Number		Program						
Exam 2022-10-28		YYYYMMDD-XXXX		NN						
#	Answer with	Answer				Points				
1	Decimal number	84				1				
2	8 bit two's complement binary number	0	1	1	1	1	0	0	1	
3	8 bit two's complement binary number	1	0	1	1	1	1	0	1	1
4	Circuit number(s)	#1				1				
5	Boolean expression, Y =	$B \cdot C \cdot D + \bar{C} \cdot \bar{D} + A \cdot B$				1				
6	Boolean expression, Y =	$\bar{B} \cdot \bar{D} + \bar{A} \cdot B \cdot C \cdot D + A \cdot B \cdot \bar{C} \cdot D$				1				
7	MUX connections, Boolean expression or Gate	$\overline{A \oplus B}$				1				
	Row CD = 00	$A \cdot \bar{B}$								
	Row CD = 01	$A \cdot B$								
	Row CD = 10	\bar{A}								
	Row CD = 11									
8	Timing diagram					1				
9	Timing diagram					1				
10	Propagation delay $t_{pd} \leq$	130 ps				1				
	Contamination delay $t_{cd} >$	35 ps								
11	Next state $Q_3 Q_2 Q_1 Q_0 =$	0101				1				
12	Boolean expression or Gate, Y =	$Q_2 \cdot Q_1$				1				
13	16 bit two's complement hexadecimal Product A x B	P		12DA		1				
14	8 bit two's complement hexadecimal Quotient (A / B) and Remainder	Q		3		R		1		1
15	8 result bits ($S_7 S_6 S_5 S_4 S_3 S_2 S_1 S_0$)	1	0	1	0	1	1	1	0	1
16	Shift register contents, 8 bits	1	1	1	0	0	1	1	0	1
TOTAL POINTS		Examiner sign				16				