

# IE1204 Digital Design Answer Form 2022-2023

Full Name		Personal Number		Program		
Exam 2023-01-10		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
3	8 bit two's complement binary number	1	0	1	1	1
4	Circuit number(s)	#2				1
5	Boolean expression, $Y = \bar{A} \cdot C \cdot D + \bar{A} \cdot \bar{C} \cdot D + B \cdot \bar{C} + B \cdot \bar{D}$					1
6	Boolean expression, $Y = \bar{B} \cdot \bar{C} + C \cdot D = (\bar{B} + C)(\bar{C} + D)$					1
7	MUX connections, Boolean expression or Gate	$A \cdot B$				1
	Row CD = 00					
	Row CD = 01	$A$				
	Row CD = 10	$\overline{A + B}$				
	Row CD = 11	$\overline{A \oplus B}$				
8	Timing diagram					1
9	Timing diagram					1
10	Propagation delay $t_{pd} \leq$ Contamination delay $t_{cd} >$	110		ps		1
		15		ps		
11	Next state $Q_3Q_2Q_1Q_0 =$	0100				1
12	Boolean expression or Gate, $Y =$	$Q_2 \cdot Q_0$				1
13	16 bit two's complement hexadecimal Product A x B	P		18CE		1
14	8 bit two's complement hexadecimal Quotient (A / B) and Remainder	Q		R		1
		5		2		
15	8 result bits ( $S_7 S_6 S_5 S_4 S_3 S_2 S_1 S_0$ )	1	0	1	1	0
16	Shift register contents, 8 bits	0	0	1	0	0
TOTAL POINTS		Examiner sign				16