

# IE1204 Digital Design Answer Form 2021-2022

Full Name		Personal Number		Program							
Practice Exam Fall 2021		YYYYMMDD-XXXX		NN							
#	Answer with	Answer				Points					
1	Hexadecimal number	ACDC				1					
2	8 bit two's complement binary number	0	1	1	0	0	1	0	0	1	
3	8 bit two's complement binary number	1	1	0	1	0	1	1	0	1	
4	Circuit number(s)	#1 and #3				1					
5	Boolean expression, Y =	$B + A \cdot D + \bar{C} \cdot D$				1					
6	Boolean expression, Y =	$B \cdot D + C \cdot D = D(B + C)$				1					
7	MUX connections	$\overline{A + B}$				1					
	Row CD = 00	$\bar{A}$									
	Row CD = 01	$A + B$									
	Row CD = 10	$A \oplus B$									
	Row CD = 11										
8	Timing diagram					1					
9	Timing diagram					1					
10	Maximum clock frequency =	5 GHz				1					
11	Next state $Q_D Q_C Q_B Q_A =$	1001				1					
12	16 bit two's complement Product A x B	1	1	1	1	1	1	1	0	1	
	MSB	0	0	0	0	1	1	1	1	1	
	LSB										
13	8 bit two's complement Quotient A / B	0	0	0	0	0	1	0	1	1	
	Remainder	0	0	0	0	0	0	0	0	1	
14	Decimal number	5.625				1					
15	5 result bits (S4 S3 S2 S1 S0)	0	1	0	0	1	1				
16	ALUControl (2 bits)	(AND)				1	0				
TOTAL POINTS		Examiner sign				16					