

IE1204 Digital Design Answer Form 2022-2023

Full Name		Personal Number	Program																																
#	Answer with	Answer	Points																																
1	Decimal number																																		
2	8 bit two's complement binary number	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																																	
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4	Circuit number(s)																																		
5	Boolean expression, Y =																																		
6	Boolean expression, Y =																																		
7	MUX connections, Boolean expression or Gate Row CD = 00																																		
	Row CD = 01																																		
	Row CD = 10																																		
	Row CD = 11																																		
8	Timing diagram <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%;">0 ms</td> <td style="width: 10%;">5 ms</td> <td style="width: 10%;">10 ms</td> <td style="width: 10%;">15 ms</td> <td style="width: 10%;">20 ms</td> <td style="width: 10%;">25 ms</td> <td style="width: 10%;">30 ms</td> <td style="width: 10%;">35 ms</td> <td style="width: 10%;">40 ms</td> <td style="width: 10%;">45 ms</td> </tr> <tr> <td>CLK</td> <td colspan="10"></td> </tr> <tr> <td>Q</td> <td colspan="10"></td> </tr> </table>		0 ms	5 ms	10 ms	15 ms	20 ms	25 ms	30 ms	35 ms	40 ms	45 ms	CLK											Q											
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10	Propagation delay $t_{pd} \leq$	ps																																	
	Contamination delay $t_{cd} >$	ps																																	
11	Next state $Q_3Q_2Q_1Q_0 =$																																		
12	Boolean expression or Gate, Y =																																		
13	16 bit two's complement hexadecimal Product A x B	P																																	
14	8 bit two's complement hexadecimal Quotient (A / B) and Remainder	Q	R																																
15	8 result bits ($S_7 S_6 S_5 S_4 S_3 S_2 S_1 S_0$)	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																																	
16	Shift register contents, 8 bits	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																																	
TOTAL POINTS		Examiner sign																																	