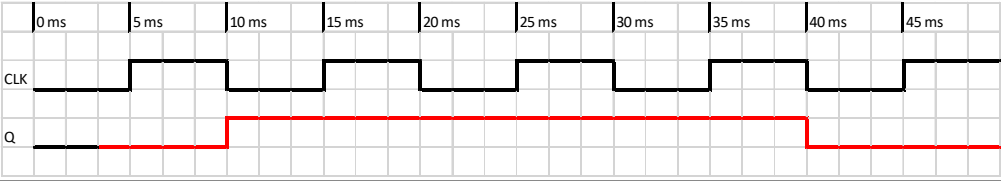


IE1204 Digital Design Answer Form 2024-01-12

Full Name		Personal Number	Program
Exam 2024-01-12		YYYYMMDD-XXXX	NN
#	Answer with	Answer	Points
1	Decimal number	113	1
2	8 bit two's complement hexadecimal number	0xF2	1
3	8 bit two's complement hexadecimal number	0x11	1
4	Boolean expression, Y =	$Y = A + \bar{B} \cdot C$	1
5	Circuit number	#1	1
6	Boolean expression, Y = $B \cdot \bar{D} + C \cdot \bar{D} + \bar{B} \cdot \bar{C} \cdot D = (\bar{B} + \bar{D})(\bar{C} + \bar{D})(B + C + D)$		1
7	MUX connections, Boolean expression or Gate Row CD = 00	$\overline{A \cdot B}$	1
	Row CD = 01	$A \oplus B$	
	Row CD = 10	$\bar{A} \cdot B$	
	Row CD = 11	$\overline{A \oplus B}$	
8	Timing diagram 		1
9	Flip-Flop or Latch #	#3	1
10	Maximum clock frequency = Is the Hold time constraint ok?	4 GHz [] Yes [X] No	1
11	Number of states = Final state Q ₃ Q ₂ Q ₁ Q ₀ =	13 1 1 1 0	1
12	Boolean expression Y = Input D ₃ D ₂ D ₁ D ₀ =	$Y = Q_2 \cdot Q_0$ 0 0 1 0	1
13	16 bit two's complement hexadecimal Product A x B	P 0x2F6A	1
14	8 bit two's complement hexadecimal Quotient (A / B) and Remainder	Q 0x05 R 0x02	1
15	8 result bits (S ₇ S ₆ S ₅ S ₄ S ₃ S ₂ S ₁ S ₀)	1 1 0 1 1 1 0 1	1
16	Memory contents, 8 decimal digits	1 7 3 2 0 5 0 8	1
TOTAL POINTS		Examiner sign	16