

IE1204 Digital Design Answer Form 2023-2024

| Full Name | | Personal Number | Program | | | | | | | | |
|--------------|--|--|---------|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | |
| # | Answer with | Answer | Points | | | | | | | | |
| 1 | Decimal number | | | | | | | | | | |
| 2 | 8 bit two's complement hexadecimal number | 0x | | | | | | | | | |
| 3 | 8 bit two's complement hexadecimal number | 0x | | | | | | | | | |
| 4 | Boolean expression, Y = | | | | | | | | | | |
| 5 | Circuit number | | | | | | | | | | |
| 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 | | | | | | | | | | |
| | <p style="font-size: small; margin-top: 5px;"> 0 ms 5 ms 10 ms 15 ms 20 ms 25 ms 30 ms 35 ms 40 ms 45 ms CLK Q </p> | | | | | | | | | | |
| 9 | Flip-Flop or Latch # | | | | | | | | | | |
| 10 | Maximum clock frequency = Is the Hold time constraint ok? | GHZ <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | |
| 11 | Number of states = Final state $Q_3Q_2Q_1Q_0 =$ | <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> </tr> </table> | | | | | | | | | |
| | | | | | | | | | | | |
| 12 | Boolean expression Y = Input $D_3D_2D_1D_0 =$ | <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> </tr> </table> | | | | | | | | | |
| | | | | | | | | | | | |
| 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 | Memory contents, 8 decimal digits | | | | | | | | | | |
| TOTAL POINTS | | Examiner sign | | | | | | | | | |