<table>
<thead>
<tr>
<th>#</th>
<th>Answer with</th>
<th>Answer</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Decimal number</td>
<td>84</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>8 bit two's complement binary number</td>
<td>01111111000</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>8 bit two's complement binary number</td>
<td>101111011</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Circuit number(s)</td>
<td>#1</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Boolean expression, ( Y = B \cdot C \cdot D + \overline{C} \cdot \overline{D} + A \cdot B )</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Boolean expression, ( Y = \overline{B} \cdot \overline{D} + \overline{A} \cdot B \cdot C \cdot D + A \cdot B \cdot \overline{C} \cdot D )</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>MUX connections, Boolean expression or Gate</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Row CD = 00</td>
<td>( A \oplus B )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Row CD = 01</td>
<td>( A \cdot \overline{B} )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Row CD = 10</td>
<td>( A \cdot B )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Row CD = 11</td>
<td>( \overline{A} )</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Timing diagram</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Timing diagram</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Propagation delay ( t_{pd} \leq 130 ) ps</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Contamination delay ( t_{cd} &gt; 35 ) ps</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Next state ( Q_3Q_2Q_1Q_0 = 0101 )</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Boolean expression or Gate, ( Y = Q_2 \cdot Q_1 )</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>16 bit two’s complement hexadecimal Product ( A \times B )</td>
<td>12DA</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>8 bit two’s complement hexadecimal Quotient ( A / B ) and Remainder</td>
<td>3 ( R ) 1</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>8 result bits ( (S_7 S_6 S_5 S_4 S_3 S_2 S_1 S_0) )</td>
<td>101111011</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Shift register contents, 8 bits</td>
<td>111001101</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL POINTS</td>
<td></td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>