Quiz 9: May 29, 2014

1. (4 points) What is $129.75_{10}$ in Binary—before normalization (1 point)? What is $129.75_{10}$ in Binary scientific notation (1 point)? Fill in the IEEE Floating point below (2 points).

   \[
   \begin{align*}
   a) & \quad 1.0000001 \cdot 2^7 \\
   b) & \quad 1.000000111 \times 2^7
   \end{align*}
   \]

<table>
<thead>
<tr>
<th>Decimal</th>
<th>Floating Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>129.75</td>
<td>0.0000000011</td>
</tr>
</tbody>
</table>

2. (6 points) Each of the next three questions has to do with $10.6_{10}$.

   (a) What is $10.6_{10}$ in Binary—before normalization (3 points)?

   \[
   1010.1001
   \]

   (b) What is $10.6_{10}$ in Binary scientific notation (1 point)?

   \[
   1.010\overline{1001} \times 2^3
   \]

   (c) What is a hexadecimal representation of the answer in Part (a) (2 points)?

   \[
   \overline{A} \cdot \overline{9}
   \]