**Question 1:**

Since the binary number system is based on 2 symbols 1 and 0 it is a base 2 system. These two symbols starting at the right side help identify each position (each position is expressed as power of two) as one’s, two’s, four’s eight’s, sixteen’s, thirty-two’s etc.

**Question 2:**

Since the decimal number system is based on 10 symbols (0,1,2,3,4,5,6,7,8,9) it is a base ten. These symbols starting at the right-hand side help identify each position as one’s, ten’s, hundred’s, thousand’s, ten thousand’s, etc.

**Question 3:**

Since the hexadecimal number system is based on 16 symbols (0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F) it is a base sixteen system. In hexadecimal system each spot has 16 values unlike 10 in decimal. This means starting from the rightmost position a position is identified as one’s, sixteen’s, two-hundred and fifty-sixth’s etc.

**Question 4:**

A base seven system would have 7 symbols. 0,1,2,3,4,5,6.

**Question 5:**

|  |  |  |
| --- | --- | --- |
| **Binary** | **Decimal** | **Hexadecimal** |
| **0000 0001** | 1 | 1 |
| 0000 1000 | **8** | 8 |
| 0001 0000 | 16 | **10** |
| **0100 0000** | 64 | 40 |
| 0100 1110 | **78** | 4E |
| 0100 1111 | 79 | **4F** |
| **0101 1010** | 90 | 5A |
| 0110 0100 | **100** | 64 |
| 0111 1111 | 127 | **7F** |
| 1111 1111 | **255** | FF |