

**Practice Quiz - Binary**

**Question 1:**

**How many possible values can we have with the 8 bits in a byte?**

**256**

**127**

**8**

**144**

**Since there are 8 bits with two values each, the highest number of possible values is 2 to the power of 8, or 256.**

**Question 2:**

**What is the highest decimal value a byte can represent?**

**1**

**256**

**Any number**

255

There are 256 values in a byte, from the decimal number 0 to 255, which is the highest value since the count starts at 0.

**Question 3:**

**Why did UTF-8 replace the ASCII character-encoding standard?**

UTF-8 can store a character in more than one byte.

UTF-8 only uses 128 values.

ASCII can store emojis.

ASCII can store a character in more than one byte.

UTF-8 replaced the ASCII character-encoding standard because it can store a character in more than a single byte.

**Question 4:**

**What is 10101010 in decimal format? Please use this Binary Table to find the answer.**

126	64	32	16	8	4	2	1
1	0	1	0	1	0	1	0

$$128 + 32 + 8 + 2 = 170$$

128, 32, 8, and 2 are on, so the equation is  $128+32+8+2$ , which equals 170.

160

170

200

48

### Question 5:

What is 45 in binary form? Please use this Binary Table to find the answer.

126	64	32	16	8	4	2	1
0	0	1	0	1	1	0	1

$$32 + 8 + 4 + 1 = 45$$

32, 8, 4, and 1 are on, and they add up to 45.

10000010

00101101

01001001

00111011