swap two nibbles in a byte

1.What does it mean to swap two nibbles in a byte?

- Reversing the order of the bits within a byte
- **Exchanging the values of the four most significant bits (MSBs) with the four least significant bits (LSBs) within a byte**
- Dividing the byte into two equal halves
- Converting a byte to a different data type

Ans: Exchanging the values of the four most significant bits (MSBs) with the four least significant bits (LSBs) within a byte

2. How many bits are there in a nibble?

- **4 bits**
- 8 bits
- 16 bits
- 2 bits

Ans: 4 bits

3. What is the maximum decimal value that can be represented in a nibble?

- 10
- 255
- 16
- **15**

Ans: 15

4. Which bitwise operation is commonly used to extract the nibbles from a byte?

- **Bitwise AND (&)**
- Bitwise OR (|)
- Bitwise XOR (^)
- Bitwise NOT (~)

Ans: Bitwise AND (&)

5.What is the result of swapping a byte that has equal values in its MSBs and LSBs?

- **The byte remains unchanged**
- The byte becomes zero
- The byte becomes all ones (0xFF)
- The byte becomes a different value, but not zero or all ones

Ans: The byte remains unchanged

6.What is the maximum number of times you can swap the nibbles in a byte before reaching the original byte again?

- 1 time
- 2 times
- **4 times**
- 8 times

Ans: 4 times

7.Is nibble swapping a reversible operation?

- **Yes, it can be reversed to obtain the original byte**
- No, once the nibbles are swapped, the original byte cannot be recovered
- It depends on the specific byte value
- It depends on the programming language or platform used

Ans: Yes, it can be reversed to obtain the original byte

8.Swapping the nibbles in `0xDF` will yield which of the following?

- **0xFD**
- 0xDF
- 0x6F
- 0xF6

Ans: 0xFD

9.Can the concept of nibble swapping be applied to data types larger than a byte?

- Yes, it can be applied to larger data types like integers or floating-point numbers
- **No, nibble swapping is specific to bytes and cannot be applied to larger data types**
- It depends on the programming language or platform used
- Only if the larger data type is represented using bytes internally

Ans: No, nibble swapping is specific to bytes and cannot be applied to larger data types

10.Can nibble swapping be used to convert between different character encodings?

- Yes, nibble swapping can be used for character encoding conversion
- **No, character encoding conversion requires different techniques**
- It depends on the specific character encoding being used
- Nibble swapping is only applicable to numerical data, not characters

Ans: No, character encoding conversion requires different techniques