Digital Information - Advanced Quiz

1. A text file contains 256 characters, and each character is stored using 16 bits (e.g., UTF-16 encoding). How many bytes does the file use (not counting any metadata)?

A) 256 bytes

B) 512 bytes

C) 4096 bytes

D) 128 bytes

Answer: B) 512 bytes

2. You receive the following binary stream from a sensor:

110000111000011011111010

Assuming the data is sent in 6-bit chunks, how many complete chunks are in this transmission?

A) 3

B) 4

C) 5

D) 6

Answer: B) 4

3. You are asked to split the binary string 1001111001010110 into bytes for display. Which of the following is the correct way to split it?

A) 1001 1110 0101 0110

B) 1001111 0010101 10

C) 10011110 01010110

D) 10 011110 01010110

Answer: C) 10011110 01010110

4. A black-and-white image is 64 pixels wide and 32 pixels tall. Each pixel is stored using 1 bit. How many bytes are needed to store the image?

A) 256 bytes

B) 512 bytes

C) 2048 bytes

D) 4096 bytes

Answer: B) 256 bytes

5. You are given this binary sequence: 01101001. What is the decimal equivalent of this byte?

A) 105

B) 73

C) 169

D) 65

Answer: A) 105

6. How many bits are in 2 bytes?

A) 8 bits

B) 12 bits

C) 16 bits

D) 24 bits

Answer: C) 16 bits

7. Consider this binary data: 1101011001100110. Which option shows a space after each byte?

A) 1101 0110 0110 0110

B) 11010110 01100110

C) 11 0101 10 0110 0110

D) 1 1 0 1 0 1 1 0 0 1 1 0 0 1 1 0

Answer: B) 11010110 01100110

8. Which of the following best describes a bit (binary digit)?

A) A bit can store values from 0 to 9

B) A bit is a series of multiple 0s and 1s

C) A bit can store either 0 or 1

D) A bit stores any number between 0 and 100

Answer: C) A bit can store either 0 or 1

9. How many bytes are in 64 bits?

A) 6 bytes

B) 8 bytes

C) 16 bytes

D) 32 bytes

Answer: B) 8 bytes

10. Convert this binary number into 2 bytes with a space between:

1110001111110001

A) 1110 0011 1111 0001

B) 11100011 11110001

C) 11 10001111 110001

D) 1 1 1 0 0 0 1 1 1 1 1 0 0 0 1

Answer: B) 11100011 11110001