## **Image and Text Representation Worksheet - Basic**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## **Section A: Text Representation**

1. What is a character set? Choose the correct answer:

- a) A set of characters used in a computer game
- b) A tool that converts text to binary by assigning binary values to characters
- c) A set of special symbols only
- d) A collection of fonts

Answer: \_\_\_\_\_

2. Fill in the blanks:

ASCII uses \_\_\_\_\_\_ bits to represent each character, which means it can represent up to \_\_\_\_\_\_

different characters.

3. Match the following terms with their correct descriptions:

Term	Description
ASCII	A. Uses 16-bit binary numbers to represent characters
Unicode	B. Can represent approximately 65,000 characters
8-bit	C. Uses 8-bit binary numbers to represent characters
Character set	D. Contains all characters and their binary values

ASCII: \_\_\_\_\_ Unicode: \_\_\_\_\_ 8-bit: \_\_\_\_\_ Character set: \_\_\_\_\_

4. Why was Unicode developed? Select all that apply:

- a) To represent more characters than ASCII
- b) To support different languages with larger alphabets
- c) To make computers faster

• d) To allow for symbols like emojis

Answer: \_\_\_\_\_

## **Section B: Image Representation**

5. What is a pixel? Choose the correct answer:

- a) A small animal
- b) A tiny dot of color that makes up an image
- c) A type of digital camera
- d) A computer screen

Answer: \_\_\_\_\_

6. In a black and white image, which binary value typically represents black?

- a) 0
- b) 1

Answer: \_\_\_\_\_

7. Fill in the blanks:

The \_\_\_\_\_\_ of an image refers to how many pixels wide and high it is. The

\_\_\_\_\_ refers to how many bits are used to represent each color.

8. True or False:

a) Increasing the resolution of an image will make the file size smaller.

b) RGB stands for Red, Green, Blue.

c) A higher color depth means more colors can be displayed.

## **Section C: Practical Activity**

9. Look at this simple binary representation of a 5×5 black and white image:

01010

10101

01010

10101

01010

Draw what this image would look like if 1 represents black and 0 represents white.

Draw your image in the grid below:


10. If you wanted to send a secret message to a friend using ASCII, how would you convert the word "HI" to

binary? (Use an ASCII table or the internet to help)

Bonus Question: Why do websites often use compressed images with lower quality?