CS 205 Midterm Exam: D. Hepting
March 1, 2019, 11:30– 12:20, CL 410

This is a closed book exam. You must maintain the confidentiality of your examination; do not provide any opportunity for others to copy any of your work. Electronic devices are NOT permitted during the exam. Please turn off and put away all cell phones and other electronic devices during the exam period.

ANSWER ALL QUESTIONS. All answers must be written on this exam in the space provided. You have 50 minutes to complete the exam. Please plan your answers, favour quality over quantity, do not exceed the space provided, and do your best to write legibly. QUESTIONS ARE ON BOTH SIDES OF THE PAPER.

This exam contributes 10 percent towards your final grade. There are 20 marks (5 questions, 4 marks each) total on this exam. Good luck.

Name (printed): _____

Student Number: ___ ___ ___ --- ___ ___ ___ ---___ ___ ___

Signature: _____

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Q1. What is indicated by RGB and HSB? How are they similar? How are they different?

Q2. To what do sampling and quantization refer? Why are they important for digital multimedia?

Q3. What is the difference between lossless and lossy compression? What does the amount of information have to do with compression? Briefly describe one way to losslessly compress an RGB image.

Q4. If a Unicode character codepoint has a value that can be represented using 7 bits or less, UTF-8 can encode that character in 1 byte. What is the format of this byte? If a Unicode character codepoint has a value that can be represented using 14 bits, UTF-8 can encode that character in 3 bytes. What is the format of these bytes?

Q5. The following code is the basic sketch.js file that is provided at https://editor.p5js.org/. Explain what this code does. What code would you add if you were interested in doing something when the mouse button is pressed?

```
function setup() {
  createCanvas(400, 400);
}

function draw() {
  background(220);
}
```