Fundamentals and Images:

1. What is hardcoding?
2. What resource is available if you don’t know what a certain built in MatLab command does?
3. Given the following row vector, my_vector = [2,1,3,4,14,5] how would you index:
   a. The first element?
   b. The last element? (without hardcoding)
   c. The third element?
4. What does imread do to the image file passed in?
5. How many dimensions does vec_mat have in the following code and what are they?
   vec_mat = imread('CSE7rocks.jpg')
6. Find the following values from the given matrix.
   my_image = imread('hello_world.jpg');
   a. Red value of a pixel at row 222 column 345
   b. All the pixel values in row 5, column 125
   c. All the blue pixel values in row 99
   d. All the pixel values in column 12
7. Use the size function to find the following of the given matrix.
   image_matrix = imread('size_mat.jpg');
   a. Size of the matrix with rows,columns, and floors
   b. Only the number of rows
   c. Only the number of columns

Arrays and Functions:

1. Given the following matrix, find what number is in row 4, column 3.
   mat =
   1   2   3   4   5
   1   65  24  23  56
   223  13  13   5   2
   3   1   5   7   3
   2   4   2  67   4
2. The following are function headers. How would you call each one of them. If there is an output store it.
   a. function [] = call_me()
b. function [ ] = call_me (some_number)
c. function [ some_output ] = call_me(some_number, some_string)
d. function [ some_output, second_output ] = call_me(some_number, some_string)

3. Make a matrix of 0’s using the zeros function. The number of rows and columns in this new matrix must be the same the number of rows and columns in the matrix same_size_matrix. (Hint: you don’t need to know the exact size of same_size_matrix).

4. Modify the following image matrix as directed:
   modify_me = imread('Modify_image.jpg');
   a. Cut it half in width
   b. Cut it half in length
   c. Squish it in width
   d. Squish it in length

5. A function header read_file is given below and expects a file name. State if the function calls are correct and why the incorrect ones will cause an error? Each function call is independent (assume the part a never happened if you are doing part b and so on).
   function [ some_output ] = read_file(name_of_file)
   some_output  = imread(name_of_file);
   a. filename = 'hello.jpg';
      output = read_file(filename);
   b. output = read_file(filename);
   c. output = read_file('filename');
   d. output = read_file('hello.jpg');
   e. read_file('hello.jpg');

Decisions and Pixels:

1. What must every if statement have in MATLAB?
2. Is an else always required?
3. Write the specified if statements for the following matrix:
   conditional_mat = imread('if_statements.jpg');
   a. Check if the blue value of pixel in row 34, column 23 is greater than 100
   b. Check if the blue value and red value of pixel in row 34, column 23 are greater than 100
   c. Check if the blue value or red value of pixel in row 34, column 23 are greater than 100
   d. Check if the red values of pixel in row 34 are greater than 100