Assignment 1

The due date for submitting this assignment has passed.

Due on 2019-08-14, 23:59 IST.

1. What is the data rate (in bits) at which you are getting data into the system?
   - Accepted Answers: A

2. You are doing edge detection by convolving a 3x3 filter with each pixel in the image. Each pixel in the filter is a floating point number, and each pixel in the image consists of 4 colours (RGB) and each can be converted to floating point before computation. How many floating point multiplications will you require per second?
   - Accepted Answers: A

3. For each question below, select True (T) or False (F). Assume all other conditions are as unchanged.
   - True: T
     - True
     - False
     - True
     - True
     - False
     - True
     - False
     - True

4. A larger filter will have a lower output response than a smaller one.
   - Accepted Answers: A

5. If we want to represent numbers having a dynamic range of 10^8 using 9-bit complement binary numbers, the minimum number of bits required is
   - Accepted Answers: A

6. Mark all the statements that are correct.
   - A
   - B
   - C
   - D
   - E
   - F
   - Accepted Answers: A

7. Mark all the statements that are correct.
   - A
   - B
   - C
   - D
   - E
   - F
   - Accepted Answers: A

8. Mark all the statements that are correct.
   - A
   - B
   - C
   - D
   - E
   - F
   - Accepted Answers: A

9. A system designer finds three design solutions to a problem, and has 3 cost metrics (area, latency, power). For all metrics, lower values are better. From the solutions given here, identify which are the three optimal solutions, and briefly explain why the others are not. Solutions – A: (10, 20, 30), B: (20, 25, 30), C: (15, 25, 35), D: (20, 30, 45), E: (20, 30, 30)
   - Accepted Answers: A