IS 139 TEST – May 2015

1. What is the difference between the terms architecture and organization as applied to computer architecture? **(2 marks)**

2. Name the three basic components of every computer **(3 marks)**

3. Briefly explain 4 reasons for studying computer architecture **(4 marks)**

4. Convert the following **(8 marks)**
   (a) 11100101 to octal (base 8)
   (b) 64AF to binary (base 2)
   (c) 150 to binary (base 2)
   (d) -150 to two's complement binary representation

5. Convert the value 73.3125_{10} to it's binary representation **(2 marks)**

6. Determine the decimal number that has the following IEEE-754 32-bit floating point representation pattern: 10111110011000000000000000000000 **(4 marks)**

7. What are the largest and smallest positive numbers that can be represented in the IEEE-754 32-bit floating-point standard? **(4 marks)**

8. Sketch the circuit diagram of a 2-to-4 decoder **(4 marks)**

9. What are the 3 main stages of an instruction cycle in a von Neumann architecture? **(3 marks)**

10. State Moore's Law **(2 marks)**

11. Mention 4 implications of Moore's Law **(4 marks)**