***Computer Organization and Design 0750233 Dr. Hasan Alrefai Section 1 2nd Semester***

***Quiz 1: 13/03/2016***

***Questions 1:* *(5 marks)***

Choose the correct answer among the following: -

1. (1A5.A)16 = (?)8

A. (145.5)8 B. (354.5)8  C. (645.5)8 D. (654.5)8

2. (1001110.11)2 = (?)10

A. (62.75)10 B. (78.75)10  C. (68.75)10 D. (88.75)10

3. (177)10 = (?)8

A. (261)8 B. (252)8 C. (271)8 D. (262)8

4. (10010000)BCD = (?)16

A. (4D)16 B. (5D)16 C. (5A)16 D. (4A)16

5. (10011100.10101)2 = (?)8

A. (224.51)8 B. (233.51)8 C. (323.52)8 D. (234.52)8

***Questions 2:* *(10 marks)***

1. Express the following function in product of Maxterms:

**F (A, B, C) = (A + B)(A + C')**

a) F (A, B, C) = **∏**(0, 1, 2) b) F (A, B, C) = ∏(0, 1, 3)

c) F (A, B, C) = **∏**(1, 3, 5) d) F (A, B, C) = **∏**(1, 2, 4)

1. A flip-flop is a binary storage device capable of storing \_\_\_\_\_\_\_\_\_\_\_ of information:

a) One bit b) One byte c) One word d) Double word

1. \_\_\_\_\_\_\_\_\_\_\_\_\_ is a combinational circuit that selects binary information from one of many input lines and directs it to a single output line:

a) Adder b) Subtractor c) Decoder d) Multiplexer

1. In general, a **NAND-NAND** circuit is equivalent to which of the following circuit types?

a) AND-AND b) OR-OR c) OR-AND d) AND-OR

1. A logic circuit has three input bits X0, X1, X2 where X0 is the least significant bit and X2 is the most significant bit. The output from the circuit is 1 when its input is any of the 3-bit numbers 1, 4, 5, or 6; otherwise, the output is 0. Which of the following expressions represents the output from this circuit?

a) X2 + X1 + X0

b) X2 X0 + X2 X1

c) X1 X0 + X2 X0

d) X2 X1X0 + X2 X1

1. The number of selection lines of **16 \* 1** multiplexer is:

a) 16 lines b) 1 line c) 4 lines d) 8 lines

1. What is the number of input and output lines for **5 \* X** decoder:

a) 5 input lines and 16 output lines b) 5 input lines and 10 output lines

c) 32 input lines and 5 output lines d) 5 input lines and 32 output lines

1. Which of the following is a sequential circuit:

a) Full-Adder b) D flip-flop c) Decoder d) Multiplexer

9. (WX' + YZ') (XY' + W'Z)

a. 0 b. X'YZ c. WX'Y d. W'Y'

10. W + X'Y + Z'( W + X'Y)

a. X + Y b. W + Y'Z c. W + X'Y d. X + YZ'