


National University of Computer and Emerging Sciences, Lahore Campus

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	Exam Type:	Quiz 1b	Page(s):	2

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Section: _____

Question 1a [2+2]

Bits have no inherent meaning. Given the bit pattern

0000 0000 0100 1010 0000 1001 0110 0010

- Assuming it as I-type instruction identify source and destination register numbers.
- Assuming it as an unsigned binary value, what is the corresponding integer value?

Question 1b [8]

With $x = 0100\ 0001\ 1101\ 1000\ 0000\ 0000\ 0000\ 0000$ and $y = 1011\ 1110\ 1110\ 0000\ 0000\ 0000\ 0000\ 0000$ represent them in normalized decimal form using scientific notation and then perform following operations showing all work

- $x + y$
- $x * y$

Question 2 [8]

A sequential circuit has two D flip-flops A & B, input y and one output z. The flip-flop input equations and circuit output are as follows.

$$D_A = Ay + AB' \quad D_B = By' + AB \quad z = yA + yB$$

Draw logic diagram of the circuit and tabulate the state table