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THE LNM INSTITUTE OF INFORMATION TECHNOLOGY

COMPUTER ORGANIZATION & ARCHITECTURE (2017-18, I)

QUIZ

Time: 15 mins.

Max. Marks 10

Q1. Which of the following statements are true for Moore's law?

- Moore's law predicts that power dissipation will double every 18 months.
- ✓ Moore's law predicts that the number of transistors per chip will double every 18 months.
- Moore's law predicts that the speed of VLSI circuits will double every 18 months.
- None of the above.

Q2. Which of the following generates the necessary signals required to execute an instruction in a computer?

- Arithmetic and Logic Unit
- Memory Unit
- ✓ Control Unit
- Input/Output Unit

Q3. An instruction ADD R1, A is stored at memory location 4004H. R1 is a processor register and A is a memory location with address 400CH. Each instruction is 32-bit long. What will be the values of PC, IR and MAR during execution of the instruction?

- ✓ 4004H; ADD R1, A; 400CH
- 4008H; ADD; 400CH
- 4008H; ADD R1, A; 400CH ✓
- None of the above

Q4. Consider a 1 MB (Megabyte) byte addressable memory system, with word size of 32 bits. The number of bits in MAR and MDR will be:

- 23, 32
- ✓ 20, 8
- 23, 32
- 20, 32

$1 \times 2^{10} \times 2^{10} = 2^{20}$

8.

Q5 A computer has 2GB (Gigabytes) of byte addressable memory The number of address lines will be

31

Q6. The binary equivalent of 45.625 is 101101.101

Q7 The decimal equivalent of 10110.001 is 22.25

Q8 The hexadecimal equivalent of 10.0021001010100 is 196.50

Q9 The maximum unsigned binary number that can be represented in 12 bits is $2^{12}-1$

Q10 In two's complement representation -6 can be represented by 1010 in four bits The representation of -6 in 8-bit will be 11111010

$2^2 + 2^4 + 2^5$

$2^1 + 2^2 + 2^4 + \frac{0}{2^0} + \frac{0}{2^1} + \frac{0}{2^2}$

.101

$16 + 1 + 4 + \frac{1}{4} \times 100$ 25

0.25 100 1010

$32 + 8 + 4 + ?$ -2^3 2^1

$-8+2$

Rough

10110 1

$32 + 8 + 4 + 1$

$2 \times 1024 \times 1024 \times 1024$

$2 \times 2^{30} - 2^{31}$

+ 0 + +

0 11 0 1 $8+4+1$

2^3 2^2 2^0

$2^1 + 2^2 + 2^4$

$16 + 4 + 2$

.625 x 2

.250 $2^2 + 2^1$

.500 $2^1 + 2^0$

1.000 10110

10110

45 1

22 0 $2^5 + 2^3 + 2^2 + 2$

11 1

5 1 1 0 0 1

2 0 $2^5 + 2^3 + 1$

1 0 1 1 0 $32+8+1$