

**Internal Assessment Test 2 – December 2019**

<b>Sub:</b>	<b>Computer Organization</b>						<b>Code:</b>	18MCA14		
<b>Date:</b>	-12-19	<b>Duration:</b>	90 mins	<b>Max Marks:</b>	50	<b>Sem:</b>	I	<b>Branch:</b>	MCA	

**Note:** Answer any full 5 questions. All questions carry equal marks. Total Marks: 50

**PART-1**

1. State the following Boolean postulates: closure, associate law, communicative law, identity law, inverse, distributive law  
(OR)
2. Subtract using r's complement: i.  $(10011)_2 - (11100)_2$       ii.  $(3250)_{10} - (72532)_{10}$ .

**PART-II**

3. What is full adder? With the truth table of full adder, obtain the logical expression for sum and carry terms and implement the same using two half adders  
(OR)
4. Perform the multiplication of -4 and 2 using Booth's algorithm.

**PART-III**

5. Discuss how you can make a 3x8 decoder from two 2x4 decoders.  
(OR)

Marks	OBE	
	CO	RBT
10	CO1	L4
10	CO1	L2
10	CO1	L2
10	CO2	L3
10	CO3	L2

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	CO	RBT
10	CO1	L4
10	CO1	L2
6	CO1	L1
4	CO1	L4
10	CO1	L4
10	CO1	L1

6 Draw the circuit diagram of a 4bit binary adder–subtractor and explain how it works

**PART-IV**

7 Explain with a neat diagram the functional units of a computer.

**(OR)**

8 a. Explain with a neat diagram the Bus Structure

b. Explain basic performance equation.

**PART-V**

9 Explain the working of a MUX with the help of circuit diagram and truth table.

**(OR)**

10 Use 2-address, 1-address and zero-address instructions to execute the expression  $(A+B)-(C+D)$

5	CO3	L3
10	CO2	L1
5+5	CO2	L2
10	CO1	L1
10	CO3	L1

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