

**Internal Assessment Test 1 – November 2019**

<b>Sub:</b>	<b>Computer Organization</b>						<b>Code:</b>	<b>18MCA15</b>	
<b>Date:</b>	19-11-19	<b>Duration:</b>	90 mins	<b>Max Marks:</b>	50	<b>Sem:</b>	IA	<b>Branch:</b>	MCA

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

**Part-I**

1. Convert the following:
- (i)  $(67.6875)_{10} = (?)_2$                       (ii)  $(75.62)_8 = (?)_2$       iii)  $(10110001101011)_2 = (?)_{16}$   
 iv)  $(B65F)_{16} = (?)_{10}$                       v)  $(306.D)_{16} = (?)_2$

**(OR)**

2. Perform the following operation  
 i) Using 9's & 10's complement subtract 5250 from 62567  
 ii) Using 1's & 2's complement subtract 1010111 from 11100111

**Part-II**

3. Using K-map simplify the Boolean Function  
 i)  $F(w, x, y, z) = \sum(0, 1, 2, 4, 6, 8, 9, 12, 13, 14)$   
 ii)  $F(A, B, C, D) = \sum m(1, 3, 7, 11, 15) + \sum d(0, 2, 4)$  (with Don't care conditions)  
**(OR)**  
 4. i) State the following Boolean laws- [ closure, associate law, communicative law, identity law, inverse, distributive law ]

Marks	OBE	
	CO	RBT
10	CO1	L1
10	CO1	L1
10	CO2 CO3	L2
10	CO1	L1

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<b>Sub:</b>	<b>Computer Organization</b>						<b>Code:</b>	<b>19MCA14</b>	
<b>Date:</b>	18-11-19	<b>Duration:</b>	90 mins	<b>Max Marks:</b>	50	<b>Sem:</b>	IA	<b>Branch:</b>	MCA

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**Part-I**

1. Convert the following:
- (ii)  $(67.6875)_{10} = (?)_2$                       (ii)  $(75.62)_8 = (?)_2$       iii)  $(10110001101011)_2 = (?)_{16}$   
 iv)  $(B65F)_{16} = (?)_{10}$                       v)  $(306.D)_{16} = (?)_2$

**(OR)**

2. Perform the following operation  
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**Part-II**

3. Using K-map simplify the Boolean Function  
 iii)  $F(w, x, y, z) = \sum(0, 1, 2, 4, 6, 8, 9, 12, 13, 14)$   
 $F(A, B, C, D) = \sum m(1,3,4,5,7,8,10,11,13,15) + \sum d(0,2,14)$  (Don't care conditions)  
**(OR)**  
 4. i) What is Digital Circuit? State the following Boolean laws- [ closure, associate law, communicative law, identity law, inverse, distributive law ]

Marks	OBE	
	CO	RBT
10	CO1	L1
10	CO1	L1
10	CO2 CO3	L2
10	CO1	L1

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Part-III

- 5 i) Simplify using DeMorgan's Theorem and draw the circuit diagram : i.  
 $((A+BC)' + (AB')')'$  ii.  $((A'B)(BC')(C'D)(AC)')'$  iii.  $(ABC)' + ((AB)'C)'$   
 (OR)
6. Justify why NAND and NOR gates are known as universal gates. Derive all basic gates using NAND gates

10	CO2	L2
10	CO2	L3
10	CO1	L2
6 4	CO1	L2
10	CO2	L2
10	CO1	L2

Part-IV

- 7 State and Prove the DeMorgan's Theorem using Logic Circuit & Truth Table  
 (OR)
- 8 a) Explain about sum of product and product of sum simplification with example?  
 b) Explain about Maxterms and Minterms with an example.

Part-V

- 9 Describe all logic gates with symbol, truth table and logic expression?  
 (OR)
- 10 Write Briefly explain K-Map and its advantages?

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