SEAT No._____ No. of Printed Pages : 02

[A-28]

SARDAR PATEL UNIVERSITY

External Examination

BCA (Sem-1) [NC] (2010 Batch)

US01EBCA01: Digital Computer Electronics - I

Date: 17-11-2017 **Time: 02.00 pm – 04.00 pm** **Marks: 70**

Q-1 Select the correct option from the following questions. **10**

1 _____is way to simplify the equation.

A. Boolean Algebra B. K-MAP C. BOTH D. NONE

2 A+A'B+A'B'=?

A. 1 B. 0 C. A D. A'

3 In k-map, octets eliminates _____ variable.

A. one B. two C. three D. four

4 The relationship between a function and its binary variables can be represented in _____.

A. truth table B. decoder C. encoder D. multiplexer

5 A combinational circuit that performs the arithmetic addition of two bits is called _____.

(A) Full Adder (B) Half Adder (C) Binary Adder (D) Decoder

6 A _____ is a memory element that stores a binary digit.

A. binary adder B. decoder C. multiplexer D. flip-flop

7 In D flip-flop, when CLK is low then input is _____.

A. high B. low C. Don't care D. Not change

8 A multiplexer also called a _____.

A. data multiplier B. data selector C. data inverter D. data remover

9 The NOR gate has two or more input signals. If all inputs are _____, the output is high.

A. low B. high C. both A and B D. none

10 7. In Comparator, _____ gate is use for comparing bits in word.

A XOR B AND C NOR D XNOR

Q-2 Answer the following questions. (ATTEMPT ANY TEN) **20**

1 Describe the NAND, NOR gate.

2 Explain commutative low.

3 Draw the circuit for : $(A \oplus B)'(BC)(A \oplus C)$

4 Describe quad in k-map

(P.T.O.)

	5	Simplify using k-map F(A,B,C)=E(1,2,5)	
	6	Describe encoder in short.	
	7	Draw the circuit of half adder.	
	8	Describe binary adder in short.	
	9	Define : Flipflop, Register	
	10	Explain D flip-flop in short.	
	11	Define : shift register. What are the types of shift register?	
	12	Draw the circuit of Ring counter.	
Q-3	A	Write note on: De'Morgan's first and second theorems.	10
		OR	
Q-3	B	Explain AND, XOR, NAND gates.	10
Q-4	A	Explain 3x8 line decoder in detail.	5
	B	What is k-map? Explain octet with example.	5
		OR	
Q-4	A	Explain SOP in detail.	5
	B	Explain comparator with example.	5
Q-5	A	Explain full adder in detail.	4
	B	Explain 4x1 multiplexer	6
		OR	
Q-5	A	Explain Half adder with an example.	4
	B	Explain binary subtractor in detail.	6
Q-6	A	Explain shift left register.	5
	B	Explain ring counter in short.	5
		OR	
Q-6	A	Explain shift-right register.	5
	B	Explain controlled buffer register.	5

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