(47) Seat No :_____ No. of Printed Pages : 02

SARDAR PATEL UNIVERSITY

B.C.A. (Sem- 3)

US03SBCA21: Digital Computer Electronics

Date: 25-11-2019 Monday **Time: 02.00 pm – 04.00 pm** **Marks: 35**

Q-1 **Select the correct option from the following questions.** **(05)**

1) The NAND gate has two or more input signals. If all inputs are _____, the output is low.

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

2) _____is a way to simplify the equation.

A. Boolean Algebra B. K-MAP C. Both D. None

3) A_____ is a combinational circuit that converts binary information from the n coded inputs to a maximum of 2n unique outputs.

A. Half Adder B. Decoder C. Encoder D. Comparator

4) In D flip-flop, when CLK is high then output is_____.

A. high B. low C. invert of input D. same as input

5) A _____ register is the simplest kind of register; all it does is store a digital word.

A. shift left B. shift right C. buffer D. simple

Q-2 Do as directed. (**ATTEMPT ANY FIVE**) **(10)**

1) Explain De Morgan's first theorem.

2) Describe AND and NOR gate.

3) What is an octet in k-map?

4) Define a Flip-flop. What is a Race Condition?

5) Describe in brief about Half Adder.

6) Define comparator in short.

7) Explain controlled buffer register in short.

8) Explain ring counter in short.

Q-3 A Explain associative and commutative law. **(05)**

B What is k-map? Explain pair and quad with example. **(05)**

OR

Q-3 A Describe 8*3 line encoder in detail with truth table and diagram. **(05)**

B Prove that ABC'+ABC=AB using truth table. **(05)**

(P.T.O)

Q-4	**A**	Explain D flip-flop in detail.	**(05)**
	B	Explain full adder in detail with proper diagram.	**(05)**

OR

Q-4	**A**	Explain shift left and shift right register.	**(05)**
	B	Explain 4x1 multiplexer in detail	**(05)**

— X —