

Roll No.

Total No. of Questions : 07]

[Total No. of Pages : 02

BCA (Sem. - 3rd)

DIGITAL CIRCUITS AND LOGIC DESIGN

SUBJECT CODE : BSBC - 303 (2011 & Onward)

Paper ID : [B0230]

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is compulsory. Each question carries 2 marks.
- 2) Attempt any Four questions from Section - B. Each question carries 10 marks.

Section - A

Q1)

- a) Convert the $(317546)_{10}$ into hexadecimal format.
- b) Add -89 and 10 using 2's complement.
- c) Write a note on full adders.
- d) Discuss the De-Morgan's Theorem.
- e) Write a note on R-S Flip Flops.
- f) What does minterms and maxterms corresponds to in K-maps.
- g) What are Demultiplexers.
- h) What are up-down counters.
- i) What will be the binary representation of number $(1589)_{10}$.
- j) What will be the reduced expression for function $X'y'Z + X'YZ + XY'$.

Section - B

- Q2)** Discuss the Following:
- NOR and XOR gates
 - What is the binary representation of decimal number $(673.23)_{10}$.
- Q3)** Simplify the Boolean Function F with don't care condition in product of sums form.
 $F(w,x, y ,z)= \Sigma (0,1,2,3,7,8,10)$.
 $D(w,x, y,z)=\Sigma (5,6,11, 15)$
- Q4)** What are multiplexers? implement the Boolean Function $F(A,B,C,D) = \Sigma (0,1,3,4,8,9,15)$ using 4 x 1 multiplexer.
- Q5)** What are sequential Circuits? State the advantage of synchronous sequential circuits over asynchronous sequential circuit and Discuss the J-K flip flop and D Flip Flops.
- Q6)** What are counters? Illustrate the Design of asynchronous counters.
- Q7)** Write a note on the following
- Decoders
 - MOD-N Counters

