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Total No. of Pages: 02

Total No. of Questions: 07

BCA (2011 & Onward) (Sem. – 3)
DIGITAL CIRCUITS AND LOGIC DESIGN

M Code: 10059

Subject Code: BSBC-303

Paper ID: [B0230]

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION A

1. a) What is 1's and 2's complement?
b) What is Universal Gate?
c) What is Use of K-Maps?
d) Draw circuit of Full Adder with truth table.
e) What is limitation of R-S Flip-Flop?
f) What is limitation of J-K Flip-Flop?
g) What is clock?
h) What is a counter?
i) Draw AND gate using NOR Gate and Justify through truth table.
j) Fill in the Blank: $(25.75)_{10} = (?)_2$

SECTION B

2. Complete the following table:

Hexadecimal	Decimal	Octal	Binary
?	?	?	100000110
?	?	602	?
?	173.5	?	?
CF3	?	?	?

3. a) Use two 2-4 line decoders to make a 3-8 line decoder and explain its working.
b) Explain the working of T flip-flop and D flip-flop.
4. Draw and explain the working of 4-bit binary adder-subtractor.
5. Discuss 555 timer as Monostable and Multivibrator.
6. What are Up-Down Counters? Explain the working of any Up-Down counter.
7. Explain how a master-slave J-K Flip-Flop can avoid race condition?