Roll No.						

Total No. of Pages: 02

Total No. of Questions: 07

BCA (Sem. - 3)

DIGITAL CIRCUITS & LOGIC DESIGN

Subject Code: BSBC-303

M Code: 10059

Date of Examination: 16-12-2022

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. Answer the following:
 - a) What is a NOR gate?
 - b) What is half adder?
 - c) What is a parallel binary adder?
 - d) Explain JK flip flop.
 - e) Differentiate between D flip flop and T flip flop.
 - f) Explain up-down counter.
 - g) What is an asynchronous counter?
 - h) Convert decimal 45 to binary.
 - i) What is 2's complement of 1101100?
 - j) What is a binary subtractor?

SECTION-B

- 2. Explain the design of asynchronous counters.
- 3. How to implement Boolean equations using multiplexer and demultiplexer? Explain.
- 4. a) Explain MOD-N counters
 - b) Convert octal 127543 into binary and hexadecimal.
- 5. Differentiate between:
 - a) Half adder and full adder
 - b) RS and JKflip-flop
- 6. Explain different types of logic gates.
- 7. a) Explain the concept of a parallel binary adder.
 - b) Simplify the Boolean function:

 $F(A, B, C, D) = \sum (3,7,11,13,14,15)$ in sum-of-products form.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.