Roll No. | | | | | | | | | | | |

Total No. of Questions: 09 **Total No. of Pages: 02**

B. Tech. (CSE/IT) (Sem. 3)
DIGITAL CIRCUITS AND LOGIC DESIGN
Subject Code: BTCS-303
Paper ID: A1125

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 FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **Section C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION A

1.

a) What are ASCII codes? What are their applications?

b) Explain binary to gray conversion.

c) What is race condition? In which of the flip-flops it is a problem.

d) What is the difference between a sequential and combinational circuit?

e) What are the applications of flip-flops?

t) What is the difference between digital and binary?

g) What are synchronous counters?

h) What are shift registers?

i) What are Min and Max terms?

j) What are charged coupled device memories?

SECTION B

2. Explain the working of full adder with examples.

3. Explain various laws of Boolean algebra.

4. Discuss the classification of sequential circuits.

5. With gate level circuit, Truth table, explain 2 bit magnitude comparator.

6. State and prove De-Morgan's theorems.

SECTION C

7. Construct a 4 bit ring counter. Explain with truth table and timing diagram.

8. Explain the RAM organization. Explain RAM read and write operations.

9. Explain the circuit and functioning of full and half adders.