

Roll No.

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Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-2)

COMPUTER SYSTEM ARCHITECTURE

Subject Code : UGCA-1908

M.Code : 77416

Date of Examination : 24-05-2025

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. Write briefly:

- What is a Universal Gate? Give examples.
- State and prove De Morgan's theorems.
- Explain the importance of K-map in Boolean algebra.
- Define a Half Adder and write its Boolean expression.
- What is the function of a multiplexer in digital circuits?
- What are the limitations of RS flip-flop?
- Write the differences between latches and flip flops?
- Differentiate between Harvard and Von Neumann architecture.
- What are Memory Reference Instructions? Give an example.
- Define Control Bus and Data Bus with their significance.

SECTION-B

2. What are logic gates? Explain different logic gates with their truth tables and diagram.
3. Explain the SOP and POS forms with suitable examples.
4. Explain the working of a Full Adder with a logic diagram and truth table.
5. Discuss the Master-Slave JK Flip-Flop and how it eliminates the race-around condition.
6. Write a detailed note on RISC and CISC Architecture.
7. Explain the 16-bit Common Bus System with a neat diagram.

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