

Roll.No.

22UCSCT1002

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN  
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)  
Chromepet, Chennai - 600 044.

B.Sc.Computer Science - END SEMESTER EXAMINATIONS - NOVEMBER 2025  
SEMESTER - I

**22UCSCT1002 - Fundamentals of Digital Computer and Microprocessor**

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

### Section B

Answer any **SIX** questions ( $6 \times 5 = 30$  Marks)

1. Convert a decimal number into binary and hexadecimal with an example.
2. Why are NAND and NOR gates called Universal Gates?
3. State and explain any five laws of Boolean Algebra.
4. Draw and explain the logic diagram of a JK Flip-Flop.
5. Differentiate between a Microcomputer and a Microprocessor.
6. Explain the Program Counter and Stack Pointer in 8085.
7. Write an 8085 assembly language program to add two 8-bit numbers.
8. Explain the different types of interrupts in 8085 with examples.

### Section C

Answer any **THREE** questions ( $3 \times 10 = 30$  Marks)

9. Explain Number Systems, Codes, Binary Arithmetic, and Digital Logic with examples.
10. State and explain all Boolean algebra laws and theorems with examples.
11. Explain Microprocessors, 8085 architecture, its operations.
12. Explain 8085 assembly language programming techniques.
13. Explain and evaluate the role of DMA in 8085-based systems. Compare the CPU-controlled data transfer with DMA-controlled transfer using a timing diagram.

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