

**B. Sc. (HONOURS) FIRST SEMESTER EXAMINATIONS, 2021
RAMANANDA COLLEGE**

Subject: Computer Science

Course Code: SH/CSC/102/C-2

Course ID: 11522

Course Title: Computer System Architecture (Practical)

Full Marks: 15

Time: 2 Hrs.

The figures in the margin indicate full marks

1. Answer *any one* of the following questions: (15)

- a) Implement Full-Adder using NAND gates.
- b) Implement XOR gate using NAND gates.
- c) Implement Full-Subtractor using NAND gates.
- d) Implement a 4-bit Binary Adder using IC 7483.
- e) Implement 8×1 MUX using IC 74153.
- f) Implement S-R Flip-Flop using NAND gates.
- g) Implement J-K Flip-Flop using NAND gates.
- h) Implement a 2-bit Comparator using Basic gates.
- i) Implement the function $F = ABC + DEF$ using IC 7411.
- j) Implement a Half-Adder using NAND gates.

Signature of Moderators _____

Date _____