ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

III SEMESTER **COMPUTER SCIENCE**   Time: 2Hrs/Week

CS-Ma3-3651(2) **COMPUTER ORGANIZATION LAB** MARKS:50

w.e.f 2024-2025 (23AK Batch) **SYLLABUS**

**Course Objectives:**

To familiarize with organizational aspects of memory, processor and I/O..

**Course Outcomes:** Students after successful completion of the course will be able to:

1. Demonstrate proficiency in implementing and analyzing arithmetic micro-operations using logic gates.[L2]
2. Evaluate and compare the effectiveness of different algorithms for binary multiplication, including Booth's algorithm for signed numbers.[L3]
3. demonstrate proficiency in writing assembly language code to compute the expressions using different instruction formats and addressing modes. [L2]

**Lab Experiments**

1. Implement a C program to convert a Hexadecimal, octal, and binary number to decimal number vice versa.

2. Implement a C program to perform Binary Addition & Subtraction.

3. Implement a C program to perform Multiplication of two binary numbers.

4. Implement arithmetic micro-operations using logic gates.

5. Implement logic and shift micro-operations using logic gates.

6. Implement a C program to perform Multiplication of two binary numbers (signed) using Booth’s Algorithms.

7. Implement a C program to perform division of two binary numbers (Unsigned) using restoring division algorithm.

8. Implement a C program to perform division of two binary numbers (Unsigned) using non- restoring division algorithm.

9. Write assembly language code for A+B\*(C-D) using various instruction formats in MASM or any open-source assembler.

10. Write assembly language code for A+B\*C using various addressing modes in MASM or any open-source assembler.

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