Jodhpur Institute of Engineering & Technology

SYLLABUS

IV -Semester

Branch: CSE (AI&ML)

4AIML4 - 21: Computer Architecture Lab

Credit: 1.5 **Max. Marks: 75 (IA: 45, ETE: 30)**

0L+0T+3P **End Term Exam: 3 Hours**

Sr.No.	Experiments
1	To study arithmetic and logic unit and memory devices (RAM, ROM, HDD, FDD) .
2	To design a 4-bit common bus using 4:1 mux to transfer data from register to bus.
3	Design a 2-bit combinational shifter circuit which implements the logical shift, circular shift, arithmetic shift for both directions.
4	To design 2 bit arithmetic circuit which performs the following arithmetic operations add, add with carry, subtract, subtract with borrow, increment and decrement
5	To design 4-bit BCD Adder & Subtractor using IC 7483.
6	To design a 2-bit multiplication circuit.
7	Verify the function table of arithmetic logic unit using IC 74181.
8	Implement Logic gates using NAND and NOR gates
9	Implement a C program to perform Multiplication of two binary numbers (signed) using Booth's Algorithms.
10	Implement a C program to perform division of two binary numbers (Unsigned) using restoring division algorithm.

Tools/ software/ language :Xilinx software

TEXT BOOKS:
1. Computer System Architecture – M. Moris Mano, Third Edition, Pearson/PHI.
2. Computer Fundamentals: Architecture and Organization- B.Ram/Paperback
REFERENCES BOOKS:
1. Computer Organization – Car Hamacher, Zvonks Vranesic, Safea Zaky, Vth Edition, McGraw Hill.
2. Computer Organization and Architecture – William Stallings Sixth Edition, Pearson/PHI.
3. Structured Computer Organization – Andrew S. Tanenbaum, 4th Edition, PHI/Pearson.