**Deparment of Computer science and Engineering**

**Mandsaur University,Mandsure**

**Computer Architecture And Organazation**

**Assignment -2**

Q1. The memory locations 1000, 1001 and 1020 have data values 18, 1 and 16 respectively before the following program is executed.

MOVI Rs, 1 Move immediate

LOAD Rd, 1000(Rs) Load from memory

ADDI Rd, 1000 Add immediate

STOREI 0(Rd), 20 Store immediate

Execute the above program and compute the memory location and their value of Rd.

Q2. Consider a three word machine instruction-

ADD A[R0], @B

The first operand (destination) “A[R0]” uses indexed addressing mode with R0 as the index register. The second operand operand (source) “@B” uses indirect addressing mode. A and B are memory addresses residing at the second and the third words, respectively. The first word of the instruction specifies the opcode, the index register designation and the source and destination addressing modes. During execution of ADD instruction, the two operands are added and stored in the destination (first operand).

Predict the number of memory cycles needed during the execution cycle of the instruction.