INTRODUCTION TO 8085 INSTRUCTIONS

Arithmetic Operations
Logic Operations
Branch operation

LECTURE 4

Dronacharya Group of Institutions

ARITHMETIC OPERATIONS

1. **Addition** of two 8-bit numbers
2. **Subtraction** of two 8-bit numbers
3. **Increment/ Decrement** a 8-bit number

Example Arithmetic Operations / Instructions

1. **Add** a 8-bit number 32H to Accumulator	ADI **32H**
2. **Add** contents of Register B to Accumulator	ADD **B**
3. **Subtract** a 8-bit number 32H from Accumulator	SUI **32H**
4. **Subtract** contents of Register C from Accumulator	SUB **C**
5. **Increment** the contents of Register D by 1	INR **D**
6. **Decrement** the contents of Register E by 1	DCR **E**

Logical & Bit Manipulation Operations

1. **AND** two 8-bit numbers
2. **OR** two 8-bit numbers
3. **Exclusive-OR** two 8-bit numbers
4. **Compare** two 8-bit numbers
5. **Complement**
6. **Rotate** Left/Right Accumulator bits

Example Logical & Bit Manipulation Operations / Instructions

1. Logically **AND** Register H with Accumulator	**ANA H**
2. Logically **OR** Register L with Accumulator	**ORA L**
3. Logically **XOR** Register B with Accumulator	**XRA B**
4. **Compare** contents of Register C with Accumulator	**CMP C**
5. **Complement** Accumulator	**CMA**
6. **Rotate** Accumulator Left	**RAL**

Branching Operations

These operations are used to control the flow of program execution

1. **Jumps**
   - Conditional jumps
   - Unconditional jumps
2. **Call & Return**
   - Conditional Call & Return
   - Unconditional Call & Return

Example Branching Operations / Instructions

1. **Jump** to a 16-bit Address 2080H if Carry flag is SET. This is conditional jump. **JNC, JZ,JNZ,JP,JM,JPE,JPO**
2. **Unconditional Jump**

   3 byte instruction. 2nd and 3rd byte specify 16 bit memory address.

3. Call a subroutine with its 16-bit Address

4.Return back from the Call

5. Call a subroutine with its 16-bit Address if **Carry** flag is **RESET**

6. Return if **Zero** flag is **SET**

JC 2080H

JMP 2050H

CALL 3050H

RET

CNC 3050H

RZ