INTRODUCTION TO 8085 INSTRUCTIONS

Unit 2

LECTURE 4

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 E 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. A mulator 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 **C**arry flag is **RESET**
6. **Return** if **Z**ero flag is **SET**

```
JC 2080H

JMP 2050H

CALL
  3050H
RET
CNC
  3050H
RZ
```