Ex.No.1 Data transfer and Logical operation using 8086

1.1 Introduction:

The purpose of this experiment is to learn about the registers, instruction sets, data transfer operation and logical operation of 8086 by using AND, OR in the given two 16-bit numbers and to store them in a memory location.

1.2 Hardware Requirement:

The 8086 Microprocessor kit, Power Supply.

1.3 Program Logic:

The logical AND instruction is used for masking off bits. The bits which have to be cleared are to be AND ed with a logical zero and other bits are to be one. Hence to achieve the above objective AND operation is performed between the data and the bits which has to be masked. Data AND with 0F0FH, will mask the bits 4, 5, 6, 7, 12, 13, 14 and 15.

In a similar manner, the logical OR has to be performed to set a particular bit. The bits which have to be set are to be OR ed with a logical one and other bits are to be zero. Hence to achieve the above objective OR operation is performed between the data and the bits which has to be set. Data OR with F0F0H, will set the bits 4, 5, 6, 7, 12, 13, 14 and 15.

1.4 Program:

Introduction of general purpose registers, data transfer instruction, logical instruction (AND, OR), immediate addressing, direct addressing:

ADDRESS	LABEL	MNEMONICS	OPCODE	COMMENTS
		MOV AX, [1100H]		
		AND AX, 0F0FH		
		MOV [1200H], AX		
		HLT		

Observation

IN PUT ADDRESS	DATA
1100H	
1101H	

OUT PUT ADDRESS	DATA
1200H	
1201H	

ADDRESS	LABEL	MNEMONICS	OPCODE	COMMENTS
		MOV AX, 0000H		
		OR AX, F0F0H		
		MOV [1200H], AX		
		HLT		

Observation

OUT PUT ADDRESS	DATA
1200H	
1201H	

1.5 Pre Lab Questions:

1. Mention the functions of BIU and EU.
2. Define BUS and give the classification of Buses
3. What is assembly level programming?

1.6 Post Lab Question:

1. Write an ALP to perform NAND and NOR operation.
2. Simulate the same using emulator 8086.

Result: