SSN College of Engineering Department of Computer Science and Engineering

III year - UCS1512 - Microprocessors Lab BCD to ASCII conversion using 8051

Exp No: 14

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Aim:

To design 8051-program to covert BCD to ASCII.

Algorithm:

1. Move the value in R0 to register A.

- 2. Extract the first digit of the given number by performing AND on A and FOH. Only the first digit will be present in the register A.
- 3. Swap A interchanges the lower order and higher order nibbles of register A.
- 4. Now add 30H to A to get the ASCII value and move the value to R1.
- 5. Now extract the second digit of the given number by performing AND on A and 0FH. Only the second digit will be present in the register A.
- 6. Now add 30H to A to get the ASCII value and move the value to R2.
- 7. HERE: Infinite loop to HERE using SJMP HERE.

Program:

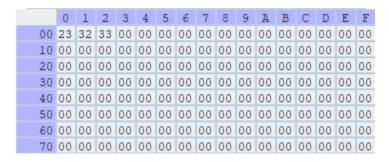
	MOV A, RO ANL A, #0F0H SWAP A ADD A, #30H MOV R1, A	; ASCII equivalent of first digit.
HERE:	MOV A, RO ANL A, #0FH ADD A, #30H MOV R2, A SJMP HERE	; ASCII equivalent of second digit.

Program	Comments

	MOV A, RO	A <- R0
	ANL A, #0F0H	A <- A ^ F0H
	SWAP A	Swap higher and lower order nibbles of A.
	ADD A, #30H	A <- A + 30H
	MOV R1, A	R1 <- A
	MOV A, RO	A <- R0
	ANL A, #0FH	A <- A ^ 0FH
	ADD A, #30H	A <- A + 30H
	MOV R2, A	R2 <- A
HERE:	SJMP HERE	Transfers execution to HERE.

Snapshot of sample output:

RO – OFH.



Result:

Thus the 8051-program to covert BCD to ASCII is executed successfully.