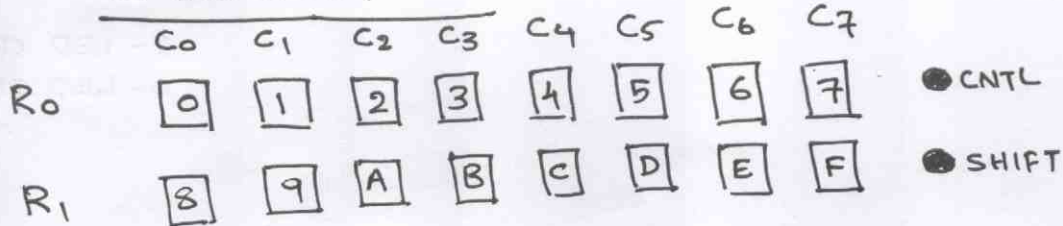


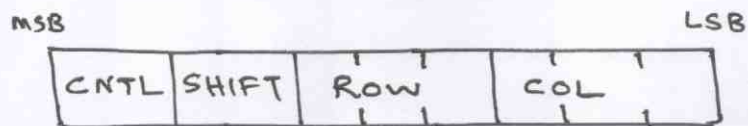
Exp No: 12: Keyboard and Display Interface - 8279

12a) Read a key from the keyboard and store it in one memory location.

Keyboard connection in the board



Keyboard Data Format



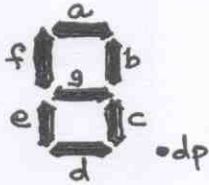
CONTROL REG: - C2
DATA REG - C0

Program

1000	BB	00	11	MOV	BX, 1100
1003	E4	C2		LOOP: IN	AL, C2
1005	A8	07		TEST	AL, 07
1007	74	FA		JZ	LOOP
1009	B0	40		MOV	AL, 40
100B	E6	C2		OUT	C2, AL
100D	E4	C0		IN	AL, C0
100F	88	07		MOV	[BX], AL
1011	F4			HLT	

12b) Roll the message "HELP US" in the display.

Segment Definition



Data Format

D ₇	D ₆	D ₅	D ₄	D ₃	D ₂	D ₁	D ₀
d	c	b	a	dp	g	f	e

1 - LED OFF

0 - LED ON

EXAMPLE-1: ROLLING DISPLAY (DISPLAY MESSAGE IS "HELP US"):

```

1000    BE  00  12    START:  ORG    1000H
1003    B9  0F  00    MOV    SI, 1200
1006    B0  10        MOV    CX, 000FH
1008    E6  C2        MOV    AL, 10
100A    B0  CC        OUT    C2, AL
100C    E6  C2        MOV    AL, CC
100E    B0  90        OUT    C2, AL
1010    E6  C2        MOV    AL, 90
1012    8A  04        OUT    C2, AL
1014    E6  C0        NEXT:  MOV    AL, [SI]
1016    E8  E7  04    OUT    C0, AL
1019    46            CALL   DELAY
101A    E2  F6        INC    SI
101C    EB  E2        LOOP  NEXT
                                JMP    START

```

1500

```

delay:  MOV  DI, 0003H
        B:  MOV  DX, FFFFH
        B1: DEC  DX
           JNZ  B1
           DEC  DI
           JNZ  B
           RET

```

```

1200    FF  FF  FF  FF
1204    FF  FF  FF  FF
1208    98  68  7C  C8
120C    FF  1C  29  FF

```