

پاسخ کوئیز پنجم سیستم دیجیتال ۲

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Include 'M64DEF.INC'
.ORG 0x0000                                BREQ next6
JMP main                                    CPI R18,0x01
.ORG 0x0020                                BREQ next2
JMP Timer0_ISR                             JMP next4
.ORG 0x0050                                next6 : DEC R17
main : LDI R16,low(RAMEND)                  CPI R17,0
      OUT SPL,R16                          OUT PORTA,R17
      LDI R16,high(RAMEND)                 BRNE next1
      OUT SPH,R16                          LDI R18,0x01
      LDI R16,0x07                         next1 : RETI
      OUT TCCR0,R16
      LDI R16,240                          next2 : INC R19
      OUT TCNT0,R16                        CPI R19,50
      LDI R16,0x01                         OUT PORTA,R17
      OUT TIMSK,R16                        BRNE next3
      LDI R16,0x0FF                        LDI R18,0x02
      OUT DDRA,R16                        next3 : RETI
      CLR R16                             next4: INC R17
      LDI R17,50                           CPI R17,50
      CLR R18                             OUT PORTA,R17
      CLR R19                             BREQ next5
      OUT PORTA,R17                       RETI
      SEI                                next5 : CLR R18
Loop : JMP Loop                           CLR R19
Timer0_ISR : LDI R16,240                   RETI
      OUT TCNT0,R16
      CPI R18,0x00

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$$f_t = \frac{8/192\text{MHz}}{1024} = 8\text{KHz} \rightarrow T_t = 1/8\text{KHz} = 125\mu\text{sec} \rightarrow \frac{2\text{msec}}{T_t} = 16 \rightarrow 256 - 16 = 240$$

هر 2msec. ، تایمر صفر وقفه صادر می کند.