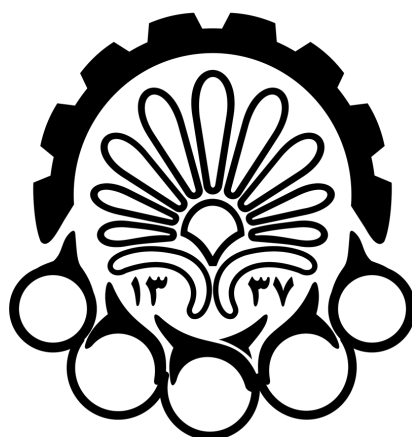


بسم الله الرحمن الرحيم

امیرحسین عباسی

گزارش تمرین ششم ریزپردازنده


۹۳۳۱۰۷۰



**دانشگاه صنعتی امیرکبیر**  
( پلی تکنیک تهران )

## سوال ۱ - الف)

برای تنظیم فرکانس ۲ مگاهرتز باید بیت فیوز آن را تنظیم کنیم .

 Edit Component ? X

Part Reference:	<input type="text" value="U1"/>	Hidden:	<input type="checkbox"/>
Part Value:	<input type="text" value="ATMEGA16"/>	Hidden:	<input type="checkbox"/>
Element:	<div><div></div><div>New</div></div>		
PCB Package:	<div><div>DIL40</div><div></div></div>	Hide All	<div></div>
Program File:	<div><div>..\..\AMIRHO~1\AppData\Loc</div><div></div></div>	Hide All	<div></div>
CKOPT (Oscillator Options)	<div><div>(1) Unprogrammed</div><div></div></div>	Hide All	<div></div>
BOOTRST (Select Reset Vector)	<div><div>(1) Unprogrammed</div><div></div></div>	Hide All	<div></div>
CKSEL Fuses:	<div><div>(0001) Int.RC 1MHz</div><div></div></div>	Hide All	<div></div>
Boot Loader Size:	<div><div>(0001) Int.RC 1MHz</div><div>(0010) Int.RC 2MHz</div><div>(0011) Int.RC 4MHz</div><div>(0100) Int.RC 8MHz</div><div>(0101) Ext.RC-0.9MHz</div><div>(0110) Ext.RC 0.9MHz-3.0MHz</div><div>(0111) Ext.RC 3.0MHz-8.0MHz</div><div>(1000) Ext.RC 8.0MHz-12.0MHz</div><div></div></div>	Hide All	<div></div>
SUT Fuses:	<div><div></div><div></div></div>	Hide All	<div></div>
Advanced Properties:	<div><div>Clock Frequency</div><div></div></div>	Hide All	<div></div>
Other Properties:	<div></div>		
<input type="checkbox"/> Exclude from Simulation	<input type="checkbox"/> Attach hierarchy module		
<input type="checkbox"/> Exclude from PCB Layout	<input type="checkbox"/> Hide common pins		
<input type="checkbox"/> Exclude from Current Variant	<input type="checkbox"/> Edit all properties as text		

OK

Help

Data

Hidden Pins

Edit Firmware

Cancel

چون مقدار ۵۱۲ prescaler را نداریم از ۱۰۲۴ prescaler عوض میکنیم .

CS02	CS01	CS00	Description
0	0	0	No clock source (Timer/Counter stopped).
0	0	1	$clk_{IO}/(No\ prescaling)$
0	1	0	$clk_{IO}/8$ (From prescaler)
0	1	1	$clk_{IO}/64$ (From prescaler)
1	0	0	$clk_{IO}/256$ (From prescaler)
1	0	1	$clk_{IO}/1024$ (From prescaler)
1	1	0	External clock source on T0 pin. Clock on falling edge.
1	1	1	External clock source on T0 pin. Clock on rising edge.

سوال ۱ قسمت ب :

باید از حالت toggle آن استفاده کنیم .  $COM01 = 0$  and  $COM00 = 1$

COM01	COM00	Description
0	0	Normal port operation, OC0 disconnected.
0	1	Toggle OC0 on compare match
1	0	Clear OC0 on compare match
1	1	Set OC0 on compare match

```

ldi r16, 0xFF
out OCR0, r16
ldi r16, (1 << OCIE0) ;enable
T0comparematch
out TIMSK, r16
ldi r16, (0 << wgm00 | 1 << wgm01 | 1
<< CS00 | 0 << CS01 | 0 << CS02);ctc
mode, no prescaler
out TCCR0, r16

```

تنظیمات سوال ۲ - قسمت الف :

```

ldi r16, (1 << TOIE0) ;enable T0_ovf
out TIMSK, r16
ldi r16, (1 << wgm00 | 1 << wgm01 | 1
<< CS00 | 0 << CS01 | 1 << CS02 | 0 <<
COM00 | 1 << COM01)
out TCCR0, r16
ldi r16, (0 << PD6 | 0 << PD7)
out DDRD, r16
ldi r16, (1 << PB3)
out DDRB, r16
cbi PORTB, 3
sbi PIND, 6
sbi PIND, 7

```

## تنظیمات سوال ۲ قسمت ب

```
//ldi r16, (1 << TOIE0) ;enable
T0_ovf
//out TIMSK, r16
ldi r16, (1 << wgm00 | 0 << wgm01 | 1
<< CS00 | 0 << CS01 | 1 << CS02 | 0 <<
COM00 | 1 << COM01)
out TCCR0, r16
ldi r16, (0 << PD6 | 0 << PD7)
out DDRD, r16
ldi r16, (1 << PB3)
out DDRB, r16
```