

به نام خدا

حدیث غفوری 9825413

سوال 1

(الف)

```
.macro read
    LDS R21,@0
    OUT PORTB , R21
.endmacro
```

read \$90

read \$91

read \$92

read \$93

read \$94

nop

(ب)

```
.macro read
    LDI XL , @0
    LDI XH , @1
    LD R19,X
    OUT PORTB , R19
.endmacro
```

```
read 0x90,0x0
read 0x91,0x0
read 0x92,0x0
read 0x93,0x0
read 0x94,0x0
nop
```

سوال 2

IN R21,PINB

BST R21,4

LDS R22,\$200

BLD R22,0

STS \$200,R22

```
.include "M16DEF.INC"
```

```
.ORG
```

```
WAITR:
```

```
SBIC EECR,EWE
```

```
RJMP WAITR
```

```
SBI EECR,EERE
```

```
IN R17,EEDR
```

```
INC R17
```

```
|
```

```
WAITW:
```

```
SBIC EECR,EWE
```

```
RJMP WAITW
```

```
OUT EEDR R17
```

```
SBI EECR,EEMWE
```

```
SBI EECR,EWE
```

```
.macro sum
    IN R1,@0
    IN R2,@1
    ADD R1,R2
    STS 0X300 , R1
.endmacro
```

```
LDI R20 , 0x1
OUT PORTA , R20
LDI R21, 0x2
OUT PORTB , R21
sum PORTA,PORTB
```

```
nop
```