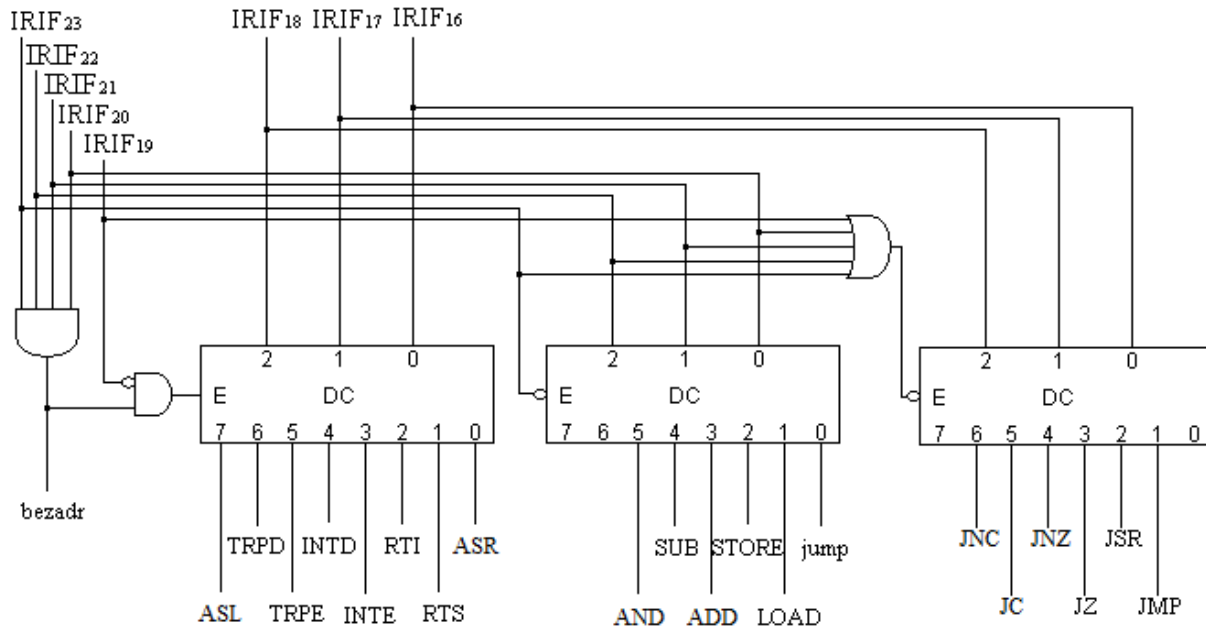


## Kolokvijum iz Arhitekture i organizacije računara 2

### -rešenje-

a) (5p)



b) (20p)

```
; Dohvatanje instrukcije
BEGIN:   PCout,MARin,Xin
         read,incA,ALUout,PCin
         wmfC
         MDROUT,IRin
; Dekodovanje instrukcije
         opcase
; LOAD instrukcija
LOAD:    admodld          ; način adresiranja za LOAD instrukciju

; Neposredno adresiranje
LDIMM:   PCout,MARin,Xin
         read,incA,ALUout,PCin
         wmfC
         MDROUT,TEMPHin
         PCout,MARin,Xin
         read,incA,ALUout,PCin
         wmfC
         MDROUT,TEMPLin
         TEMPout,Ain,branch(IRR,INTH)
         branch(,BEGIN)

; Registarsko direktno adresiranje
LDRD:    REGout,Ain,branch(IRR,INTH)
         branch(,BEGIN)

; Registarsko indirektno adresiranje sa pomerajem
```

```

LDRIP:      PCout,MARin,Xin
            read,incA,ALUout,PCin
            wmfC
            MDROUT,TEMPHin
            PCout,MARin,Xin
            read,incA,ALUout,PCin
            wmfC
            MDROUT,TEMPLin
            REGout,Xin
            TEMPout,Yin
            ALUadd,ALUout,MARin,Xin
            read
            wmfC
            MDROUT,TEMPHin
            incA,ALUout,MARin
            read
            wmfC
            MDROUT,TEMPLin
            TEMPout,Ain,branch(IRR,INTH)
            branch(,BEGIN)

```

; Memorijsko direktno adresiranje

```

LDMD:      PCout,MARin,Xin
            read,incA,ALUout,PCin
            wmfC
            MDROUT,TEMPHin
            PCout,MARin,Xin
            read,incA,ALUout,PCin
            wmfC
            MDROUT,TEMPLin
            TEMPout,MARin,Xin
            read
            wmfC
            MDROUT,TEMPHin
            incA,ALUout,MARin
            read
            wmfC
            MDROUT,TEMPLin
            TEMPout,Ain,branch(IRR,INTH)
            branch(,BEGIN)

```

```

c) (5p)    START:  LOAD      #0100h      ; A:=0100h
            STORE     R1          ; R1:=0100h
            LOAD      R0          ; A:=R0
            AND       R0          ; A:=A AND R0
            JZ        END         ; if(R0=0)goto end
            LOOP:    LOAD      R1(0000h) ; A:=a[i]
            ADD       R2          ; A:=A + R2
            STORE     R1(0000h) ; a[i]:=A
            LOAD      R1          ; A:=R1
            ADD       #0002h      ; A:=A + 2
            STORE     R1          ; R1:=A
            LOAD      R0          ; A:=R0
            SUB       #0001h      ; A:=A - 1
            STORE     R0          ; R0:=A
            JNZ       LOOP        ; NEXT
            END:

```