

MIT Practicals
Assignment 3 Part 2
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Question 1: WALP to check the forth bit of a byte stored at location 3000H is 0 or 1. If 0 store 00h else store FFH at location 3002H.

```
1
2  ;<Program title>
3  |
4  jmp start
5
6  ;data
7
8
9  ;code
10 start: mvi b,00h
11         inr b
12         lda 3000h
13         lxi h,3002h
14         rar
15         rar
16         rar
17         rar
18         ana b
19         jz zero
20         mvi m,00ffh
21         jmp exit
22 zero:   mvi m,00h
23 exit:   hlt
```

Address (Hex)	Address	Data
3000	12288	16
3001	12289	0
3002	12290	255

Question 2: Write Assembly language program to count the number of 1s in 8-bit number stored in register B.

```
1
2  ;<Program title>
3
4  jmp start
5
6  ;data
7
8
9  ;code
10 start: mvi b,1h
11         mov a,b
12         mvi c,08h
13         mvi b,00h
14 loop:   rar
15         jnc skip
16         inr b
17 skip:   dcr c
18         jnz loop
19 hlt
```

A	02	
BC	01	00
DE	00	00
HL	30	02
PSW	00	00
PC	42	14
SP	FF	FF

Answer is stored in register B.

Question 3: There is an array of some elements. Write Assembly language program to count the number of elements that are lesser than 09H.

```

1
2  ;<Program title>
3
4  jmp start
5
6  ;data
7
8
9  ;code
10 start: lxi h,4201h
11         mov c,m
12         lxi h,4202h
13         mvi b,09h
14 loop:  mov a,m
15         cmp b
16         jnc skip
17         inr d
18 skip:  inc h
19         dcr c
20         jnz loop
21 exit:  hlt

```

Address (Hex)	Address	Data
4201	16897	3
4202	16898	66
4203	16899	33
4204	16900	1

A	01	
BC	09	00
DE	01	00
HL	42	05

Answer is stored in register D.