

### Question 1

a, b)

Cell	Hex	Binary	Assembly	Description
0	2f	001 0 1111	LOAD 15	Load data from cell 15 to ACC
1	6a	011 0 1010	ADD 10	Add data in ACC with data in cell 10
2	4f	010 0 1111	STORE 15	Store data in ACC into cell 15
3	21	001 0 0001	LOAD 1	Load data from cell 1 to ACC
4	71	011 1 0001	ADD #1	Add value 1 to data in ACC
5	41	010 0 0001	STORE 1	Store data in ACC to cell 1
6	a9	101 0 1001	EQUAL 9	Check if data in ACC is equal to data in cell 9
7	d0	110 1 0000	JUMP #0	Jump to instruction at memory 0
8	e0	111 0 0000	HALT	Stop execution
9	6f	011 0 1111	ADD 15	Add data in ACC with data in cell 15
10	01	000 0 0001	#1	
11	02	000 0 0010	#2	
12	03	000 0 0011	#3	
13	04	000 0 0100	#4	
14	05	000 0 0101	#5	
15	06	000 0 0110	#6	

c) The value in memory location 15 at the end is 0x15. Program keeps adding 1 until it become equal to data in cell 9(5 iterations).in each iteration the instruction at cell 1 is executed which adds the data to the data in cell 15.

d) the program will run an extra iteration where the data in cell 15 will be added to itself after which the content in cell 1 will also become 1x70 and program will HALT/ stop execution and 0x2a will be stored in cell 15

### Question 2

```
movl 4(%esp), %eax
```

```
movl 8(%esp), %edx
```

```
xorl %ecx, %ecx
```

```
testl %eax, %eax
```

```
je L1
```

```
.p2align 4,,10
```

```
.p2align 3
```

```
testb $1, %al
je L3
addl %edx, %ecx
addl %edx, %edx
shrl %eax
jne L4
movl %ecx, %eax
ret
```