Tutorial 2

1) **Calculate the delay in the following loop assuming the system clock period= 0.33 µs.**

Label	Instruction	T-states
	LXI B, 12FF H	10
DELAY:	DCX B	6
	XTHL	16
	XTHL	16
	NOP	4
	NOP	4
	MOV A,C	4
	ORA B	4
	JNZ DELAY	10/7

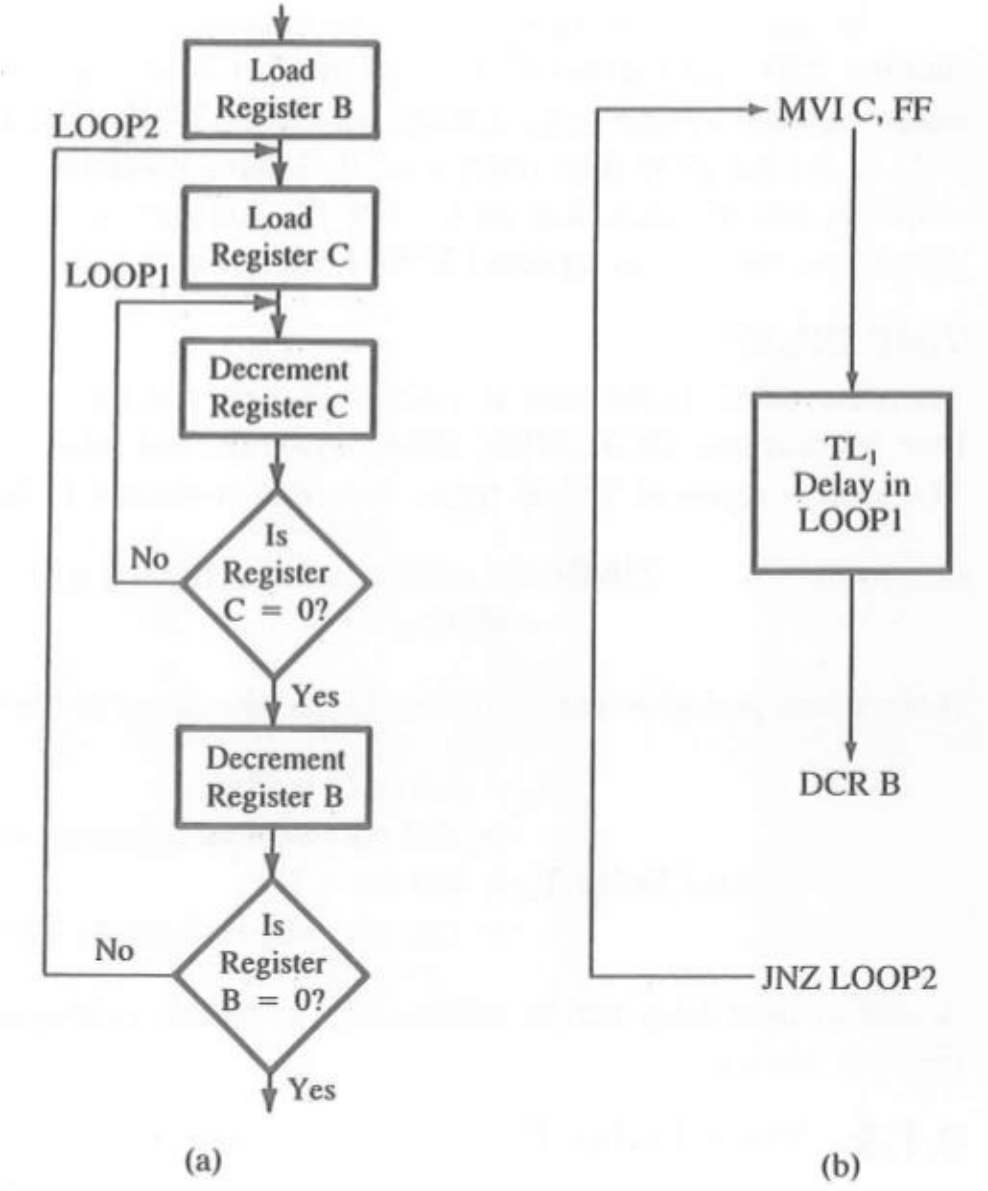
2) **Specify the number of times the following loop is executed:**

a.
```
        MVI  A,17 H
LOOP:   ORA  A
        RAL
        JNC  LOOP
```

b.
```
        MVI  A,17 H
LOOP:   RAL
        ORA A
        JNC  LOOP
```

c.
```
        LXI B, 1000 H
LOOP:   DCX  B
        NOP
        JNZ  LOOP
```

3) **In the following figure, load register C with 00Hand register B with C8H. Calculate the loop delay in LOOP1 and LOOP2 (clock period= 325 ns.)**



4) Specify the number of times the following loop is executed:

a **MVI B, 64 H**

LOOP: NOP

DCR B

JNZ LOOP

b. **ORA A**

MVI B, 64H

LOOP: DCR B

JNCLOOP

c.

```
        MVI A, 17 H
LOOP:   ORA   A
        RRC
        JNC   LOOP
```

5) Calculate the COUNT to obtain a 100 μs delay, and express the value in Hex. (Use the clock frequency of your system.)

		T-states
	MVI B, COUNT	
LOOP:	NOP	4
	NOP	4
	DCR B	4
	JNZ LOOP	10/7