**Task 3**

6 *×* 2 = 12 *marks*

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**The task files should have handwritten flow chart/Algorithm, and written Program, Snapshot of typed program and Snapshot of output.**

1. Write a program using timer 1 to generate a 2 KHz square wave frequency on one of the pins of P1.0. (MODE2). Then examine the frequency using the KEIL IDE inbuilt Logic Analyzer.

Handwritten Code and Flowchart

A yellow lined paper with black writing

AI-generated content may be incorrect.

A diagram on a yellow paper

AI-generated content may be incorrect.

Snapshot of program and output:

ORG 000DH

MOV TMOD, #20H

HERE:

MOV TL1, #1AH

MOV TH1, #0FFH

CPL P1.0

ACALL DELAY

SJMP HERE

DELAY:

SETB TR1

AGAIN:

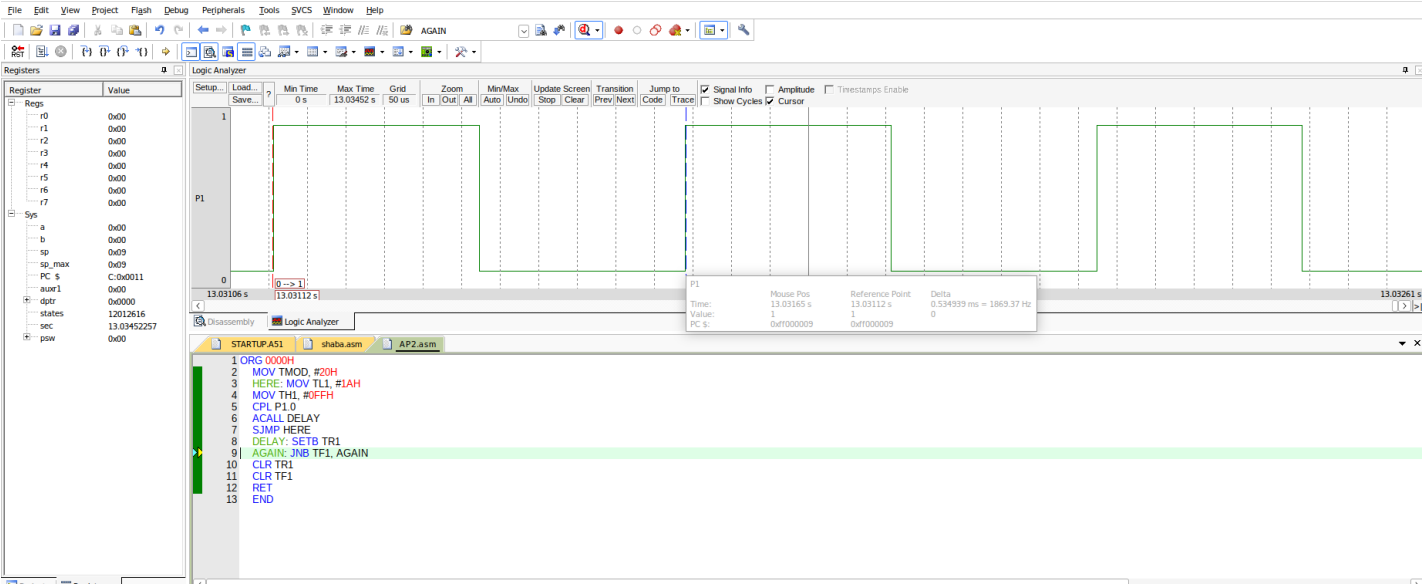
JNB TF1, AGAIN

CLR TR1

CLR TF1

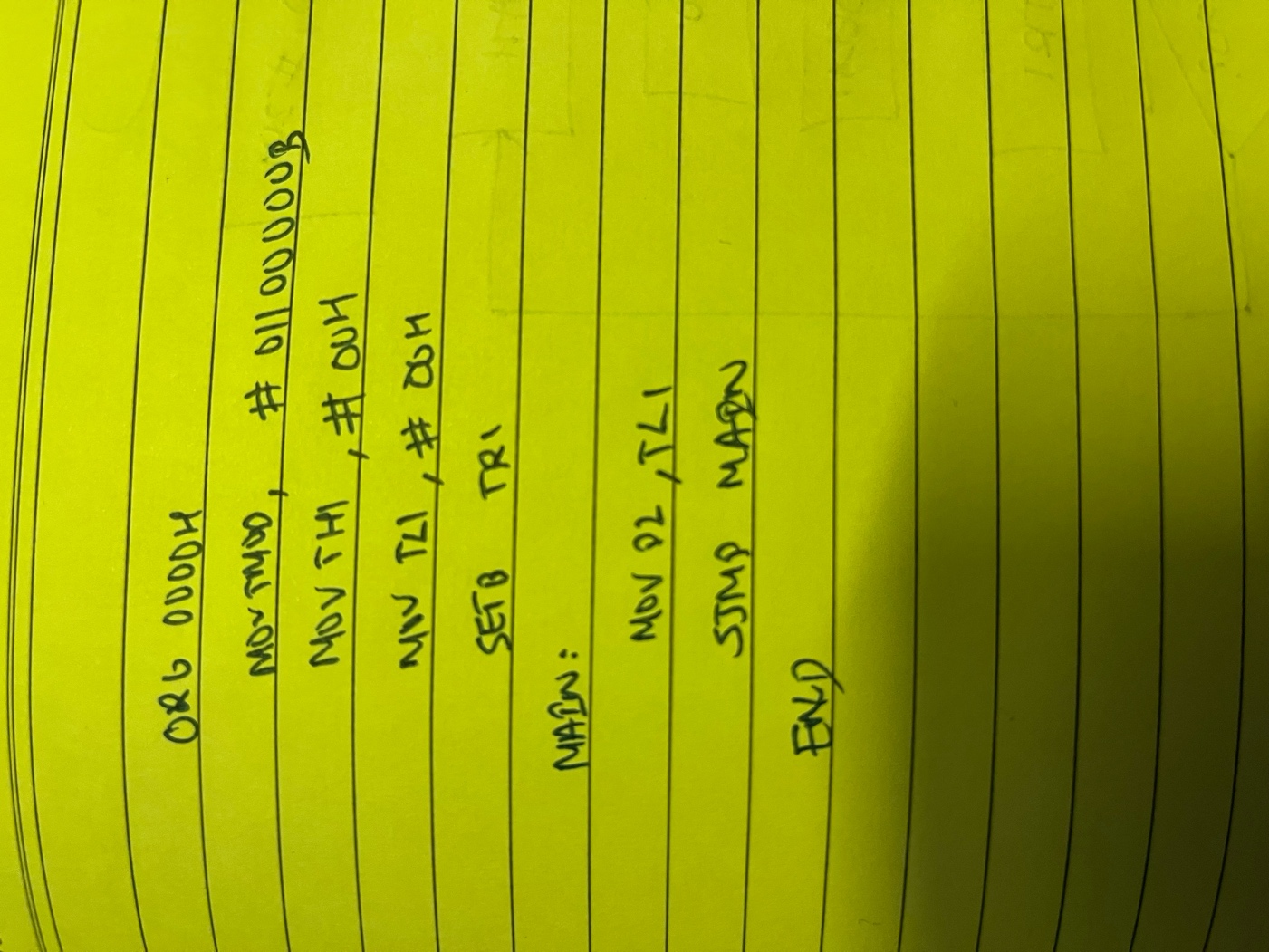
RET

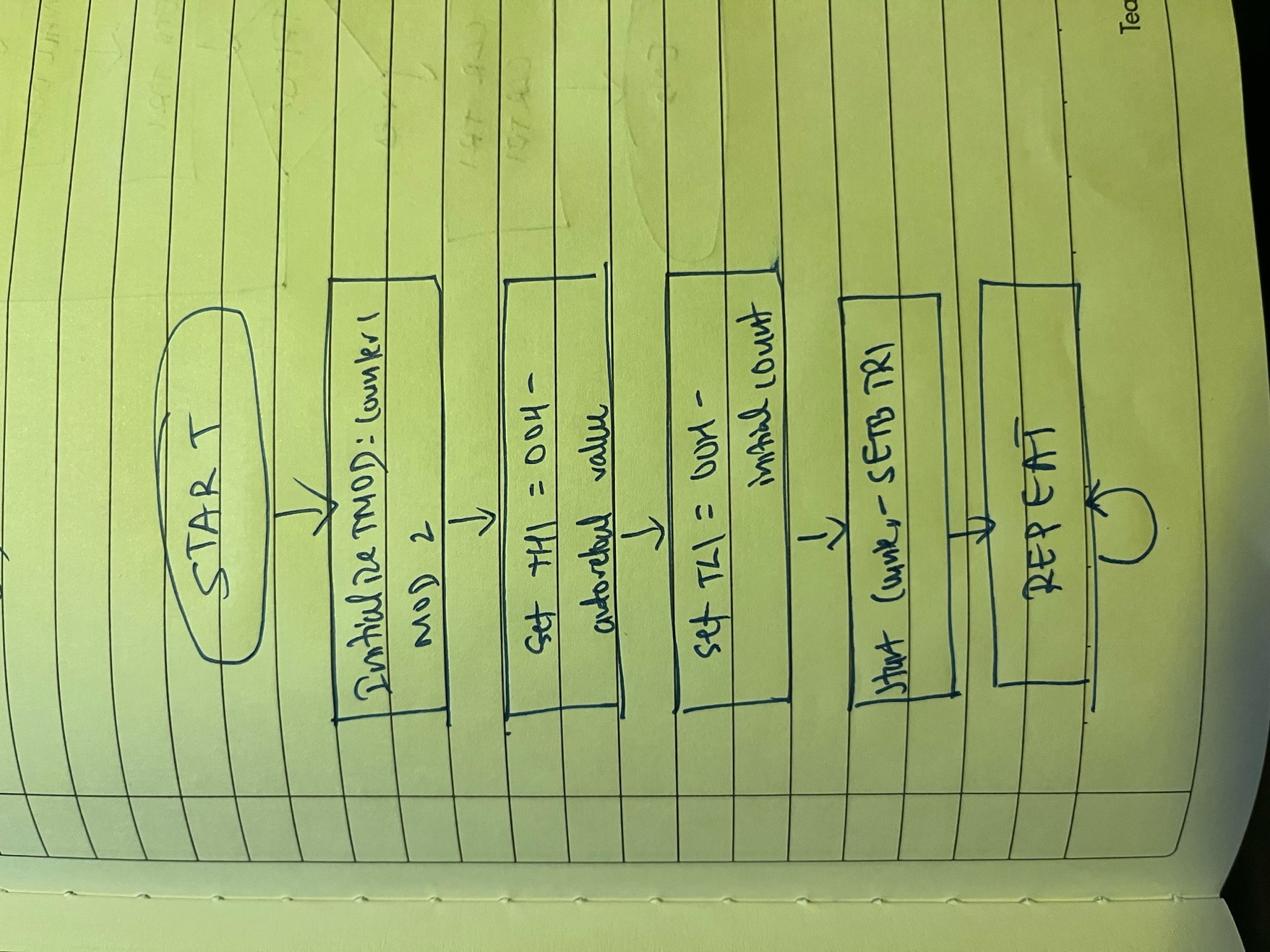
END



1. Assuming that clock pulses are fed into pin T1,write a program for counter 1 in mode 2 to count the pulses and display the state of the TL1 count on P2, which connects to 8 LEDs.

Handwritten code and flowchart:





Typed program and output:

ORG 0000H

MOV TMOD, #01100000B

MOV TH1, #00H

MOV TL1, #00H

SETB TR1

MAIN:

MOV P2, TL1

SJMP MAIN

END

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.