INSTITUTE OF COMPUTER TECHNOLOGY

B-TECH COMPUTER SCIENCE ENGINEERING 2025-26

SUBJECT:-MICROCONTROLLER & APPLICATIONs

NAME: Rahul Prajapati

ENRLL. NO: 23162171020

BRANCH: CYBER SECURITY

BATCH: 52

PRACTICAL_10

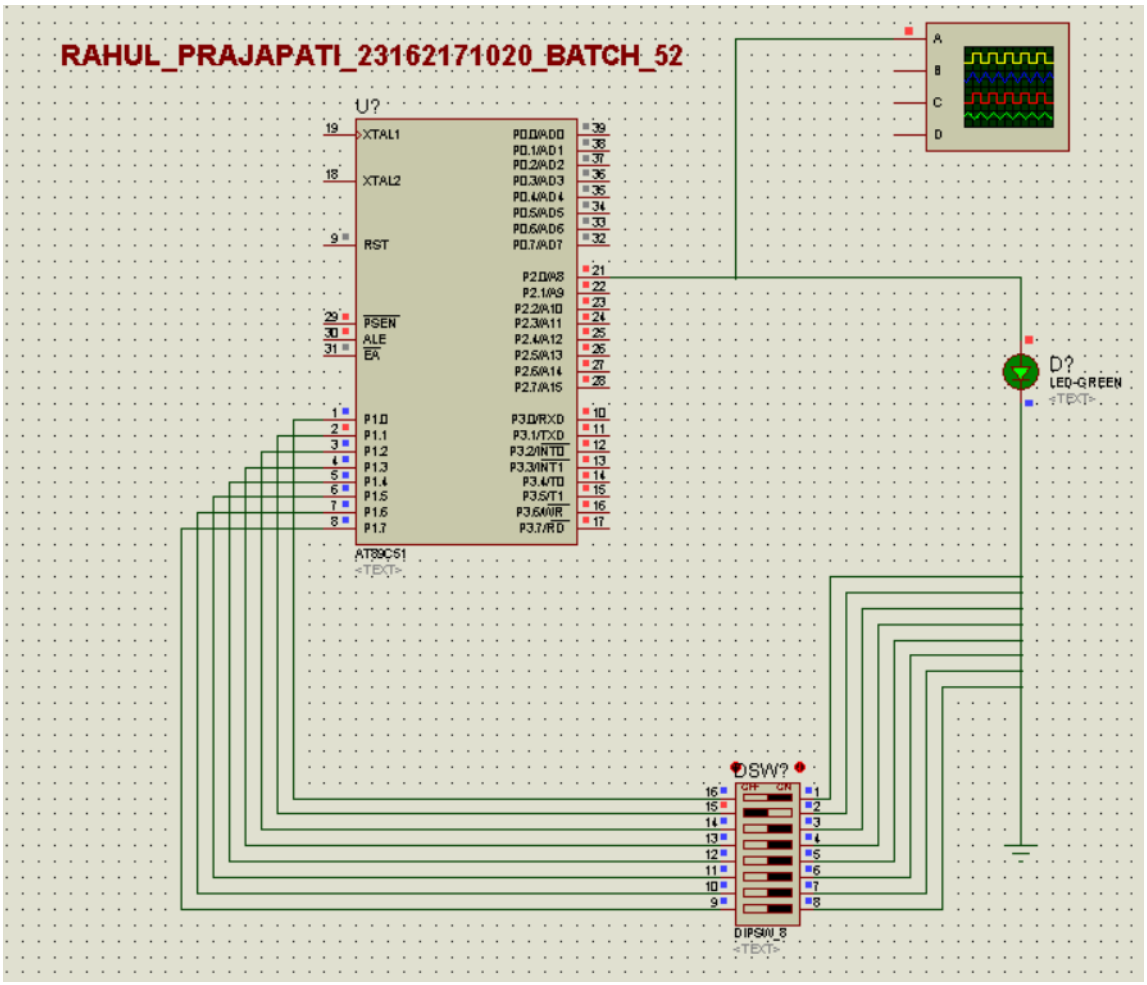
AIM: Write a program to convert a parallel data received on port 1 into serial data to be sent on P2.0 bit by bit with a delay of 500ms between each bit. Assume 11.0592 MHz crystal frequency. Connect the LED & CRO on output pin in proteus module to show the output bits.

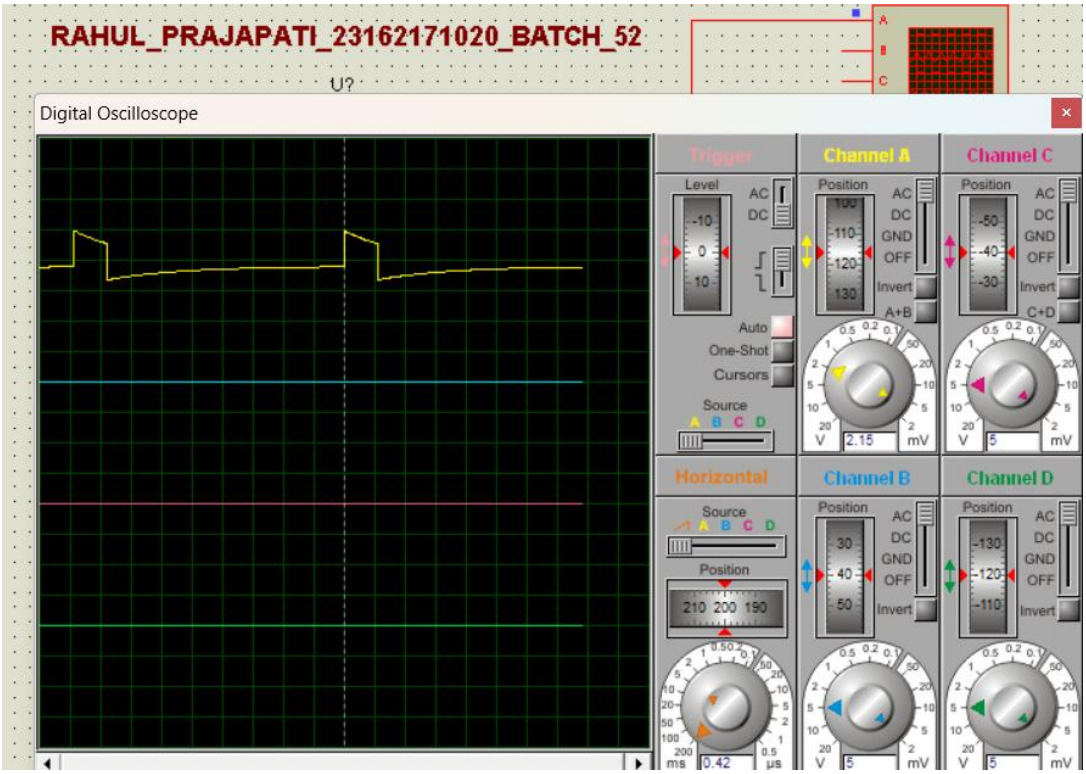
CODE:

```
ORG 0000H
START:  MOV A, P1
        MOV R2, #08H

LOOPT:  RRC A
        ACALL DELAY
        MOV P2.0, C
        DJNZ R2, LOOPT
        SJMP START

ORG 0500H
DELAY:  MOV R3, #1EH
LOOP1:  MOV R4, #1EH
LOOP2:  MOV R5, #0FEH
LOOP3:  DJNZ R5, LOOP3
        DJNZ R4, LOOP2
        DJNZ R3, LOOP1
        RET

END

```

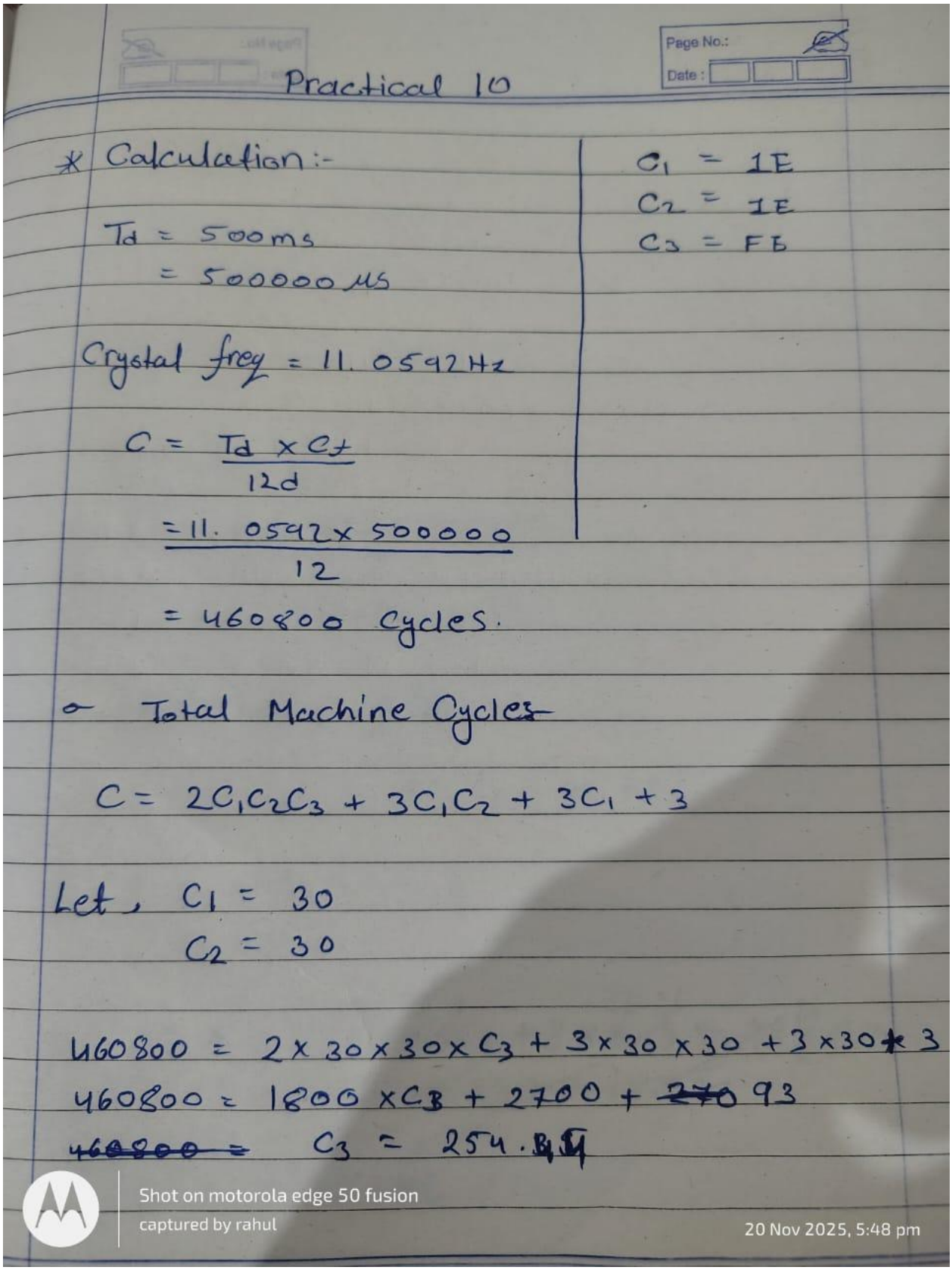
OUTPUT:

https://drive.google.com/file/d/1zMekRiTFKe3d2Kg6E_wn97pVH24uc8tc/view?usp=sharing





CALCULATION:



Practical 10

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* Calculation :-

$C_1 = 1E$
$C_2 = 1E$
$C_3 = FB$

$T_d = 500ms$
$= 500000 \mu s$

Crystal freq = 11.0592 Hz

$$C = \frac{T_d \times C_f}{12d}$$

$$= \frac{11.0592 \times 500000}{12}$$

$= 460800$ cycles.

Total Machine Cycles

$$C = 2C_1C_2C_3 + 3C_1C_2 + 3C_1 + 3$$

Let, $C_1 = 30$
$C_2 = 30$

$460800 = 2 \times 30 \times 30 \times C_3 + 3 \times 30 \times 30 + 3 \times 30 + 3$
$460800 = 1800 \times C_3 + 2700 + 93$
$C_3 = 254.8$

Shot on motorola edge 50 fusion
captured by rahul
20 Nov 2025, 5:48 pm