**Problem statement:** Write a c code using timer(set for 1s) to blink LED is ON,UART sends “LED is ON” and LED is OF,UART sends “LED is OFF”

**#include**<msp430.h>

**#include**<stdint.h>

uint8\_tflag;

uint8\_tflag1;

**char** message1[]="LED IS ON\n";

**int**position1;

**int**j;

**char** message2[]="LED IS OFF\n";

**int**position2;

**int**k;

**int main**(**void**)

{

WDTCTL = WDTPW | WDTHOLD; // Stop WDT

// Configure GPIO

P1DIR |= BIT0; // Set Pin as output

P1OUT |= BIT0;

P1SEL0 |= BIT6 | BIT7;

// Disable the GPIO power-on default high-impedance mode to activate

PM5CTL0 &= ~LOCKLPM5;

UCA0CTLW0 |= UCSWRST;

UCA0CTLW0 |= UCSSEL\_\_SMCLK;

UCA0BR0 = 8; // 1000000/115200 = 8.68

UCA0MCTLW = 0xD600; // 1000000/115200 - INT(1000000/115200)=0.68

UCA0BR1 = 0;

UCA0CTLW0 &= ~UCSWRST;

UCA0IE |= UCRXIE; // interrupt enable

// Timer1\_B3 setup

TB1CCTL0 = CCIE; // TBCCR0 interrupt enabled

TB1CCR0 = 32000;

TB1CTL = TBSSEL\_1 | MC\_1; // ACLK, up mode

**\_\_bis\_SR\_register**( GIE);

**\_\_no\_operation**();

**while**(1)

{

**if**(flag1==0 && flag == 0)

{

flag1=1;

**for**(position1=0;position1<**sizeof**(message1);position1++)

{

UCA0TXBUF= message1[position1];

**for**(j=0;j<1000;j++){}

}

}

**else if**(flag1==1 && flag == 1) {

flag1=0;

**for**(position2=0;position2<**sizeof**(message2);position2++)

{

UCA0TXBUF= message2[position2];

**for**(k=0;k<1000;k++){}

}

}

**else** ;

}

}

// Timer B1 interrupt service routine

**#if** defined(\_\_TI\_COMPILER\_VERSION\_\_) || defined(\_\_IAR\_SYSTEMS\_ICC\_\_)

**#pragma** vector = TIMER1\_B0\_VECTOR

\_\_interrupt **voidTimer1\_B0\_ISR**(**void**)

**#elif** defined(\_\_GNUC\_\_)

**void\_\_attribute\_\_** ((interrupt(TIMER1\_B0\_VECTOR))) Timer1\_B0\_ISR (**void**)

**#else**

**#error** Compiler not supported!

**#endif**

{

**if**(flag == 1){

flag = 0;

P1OUT |= BIT0;

//send uart data here

}

**else**{

flag = 1;

P1OUT &= ~BIT0;

//send uart data here

}

}

**Calculation:-**

∆t= T.N

Auxiliary clock=32kHz, T=1/f

∆t=1s

1s=(1/32k).N

N=32000 / /Count value

**Flow chart:**

