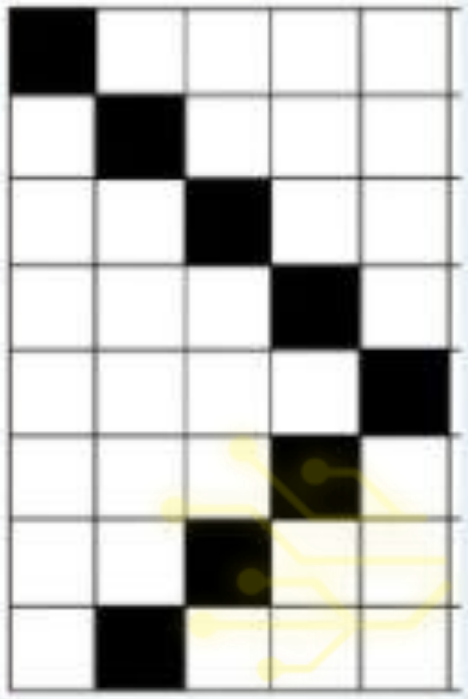
Some temperature sensor is connected to PIC16F877A A/D which has reference voltages of 0V and 5V. When A/D conversion is performed, it is observed that the digital output increases by 10 for every 5 °C increase in the temperature. What is the temperature coefficient of the sensor approximately?

- 9.8 mV/°C
- None of the given numbers
- 2.4 mV/°C
- 24 mV/°C
- 98 mV/°C

Clear my choice

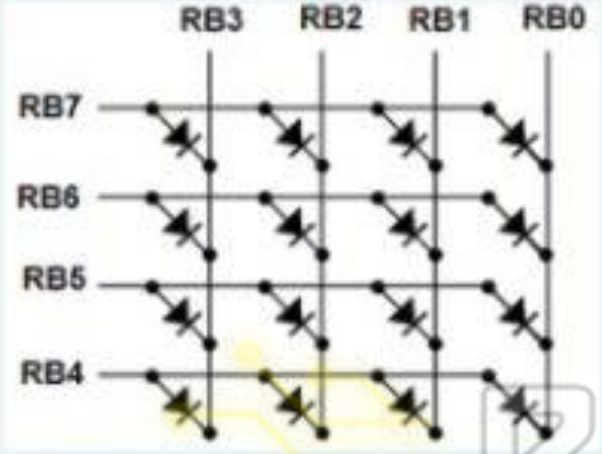
The following character is to be stored in the CGRAM of the LCD. The instruction that has to be executed before calling the SEND_CHAR subroutine to store the line 4 of this character is (assume the first line is line 0)





- MOVLW 0x02
- MOVLW 0x04
- None of the given values
- MOVLW 0x01
- MOVLW 0x10

Given the following LED matrix that is connected to PIC16F877A microcontroller. What value should be output to PORTB to turn all LEDs in the leftmost column?






- B'00001000'
- None of the given values
- B'11110111'
- B'10000000'
- B'01111111'

Clear my choice

If the USART asynchronous transmitter is enabled and it takes $0.5x10^{-3}$ s to transmit one frame, then which of the following statements is correct?

- The baud rate is 22000 bps and parity is not used
- The baud rate is 2000 bps and parity is used
- The baud rate is 2000 bps and parity is not used
- The baud rate is 20,000 bps and parity is used
- All statements are wrong
- The baud rate is 20,000 bps and no parity is used

Clear my choice

Which of the following statements is true regarding the USART in PIC16F877A?

- The asynchronous transmitter is responsible for providing the clock to the receiver
- Framing error occurs when the received stop bit is 0
- Overrun error occurs when the receiver baud rate is higher than that of the transmitter
- All other statements are wrong
- It supports full-duplex synchronous communication

Clear my choice

Four sensors are connected to the PIC 16F877A microcontroller. The voltage range of these sensors is between 1V and 3V, then the best value to store in the ADCON1 register to maximize the number of digital pins is

- None of the given Values
- $(10001011)_2$
- $(10001100)_2$
- $(10001000)_2$
- $(00001000)_2$

Clear my choice

Assuming that TMR0 = $(116)_{10}$ with Prescaler of 16, then which of the following C statements can be used to generate the same number of cycles as TIMER0?

- None of the other choices
- _delay(2240)
- _delay(116)
- _delay(16)
- _delay(140)

Clear my choice

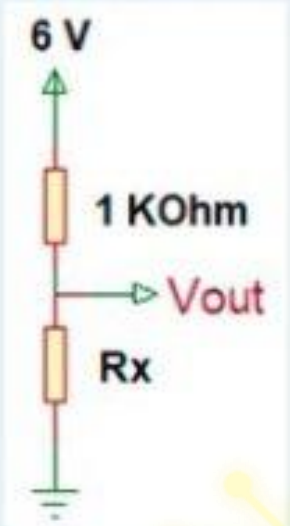
Given the following code, what is the value of XXX such that the approximate delay generated by TIMER2 is 614 ms? Assume that Fosc = 1 MHz and ignore the time required to execute the instructions.

```
        MOVLW   XXX
        MOVWF   COUNT
        BANKSEL PR2
        MOVLW   D'39'
        MOVWF   PR2
        BANKSEL T2CON
        MOVLW   0X5D
        MOVWF   T2CON
CLR     BCF     PIR1, TMR2IF
WT      BTFSS   PIR1, TMR2IF
        GOTO    WT
        DECFSZ  COUNT, F
        GOTO    CLR
```



- 2
- 8
- 5
- None of the given values
- 80
- 20
- 50

The value of Vout when converted to digital using the 10-bit PIC16877A **A**/D convertor is D'512'. Assuming that the reference voltages are 0V and 5V, then what is the value of Rx?






- None of the given numbers
- 256 Ohms
- 0.7 KOhms
- 0.2 KOhms
- 512 Ohms
- 1.2 KOhms
- 1.7 KOhms

Clear my choice

Which statement is correct about the watchdog timer?

- It can be enabled/disabled during program execution
- When it overflows, the ISR is invoked
- It can be connected to external clock
- It rests the microcontroller when it overflows
- All statements are wrong

Clear my choice

Assuming that the cathode of an LED is connected to RB1 and the following code is used to turn it on for 6.4 ms using TIMER0. Which of the line(s) in the code contains a logical error that prevents the code from performing the required task? Assume Fosc = 4 MHz.

Line No.

```
1    PORTB = PORTB & 2 ;
2    TMR0 = 56 ;
3    OPTION_REG = 0x04 ;
4    while(T0IF==0)  {};
5    T0IF = 0 ;
6    PORTB =  PORTB | 0;
```



- ○ There are no logical errors in the code
- ○ Line 6 only
- ○ Lines 1 and 4
- ◉ Lines 1 and 6
- ○ Line 1 only
- ○ All lines have logical errors
- ○ Line 4 only

Clear my choice

Three common-cathode 7-seven segment displays are connected to PORTC of a PIC16F877A microcontroller to display numbers 0 – 999. The cathodes of the tens, hundreds and ones displays are connected to RB2, RB1 and RB0, respectively, w the segments a through g are connected to RC0 through RC6. Write the sequence of instructions to display number 6 on th hundreds digit. Assume the ports are configured properly.

(Drag and drop)

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; code to enable display

[ ]

[ ]

; code to show number

[ ]

[ ]

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MOVLW 0x03 | MOVLW 0x6D | MOVWF PORTC | MOVWF PORTB | MOVWF PORTD | MOVLW 0x12 | MOVLW 0x7D

MOVWF PORTA | MOVLW 0x05