Assignment II (10PT)

1. What is addressing mode? Define the different types of addressing modes in PIC18 assembly language? (Give at least 1 assembly language example for each of them)?
2. What is DB and its use? What is TBLPTR? What are the instructions used for auto-increment and decrement option for TBLPTR? (Give at least 1 assembly program example)
3. What is Instruction pipelining? What is its use? What is instruction cycle? What is branch penalty? What is the period of the instruction cycle if the oscillator connected to the microcontroller is 40MHz?
4. What is Overflow and what are the rules for turning on the overflow flag? And list the logic and compare instructions in PIC18 assembly language.
5. Write a program to transfer value 71H serially (one bit at a time) via pin RD7. Put one high at the start and end of the data. Send the MSB first.
6. Write a program to
   A) Put 1 on WREG and
   B) Multiply the content of WREG by two (2) for 50000 times and place the result on PORTC. Use the DECFSZ instruction to perform looping.
7. What is bank switching in PIC18? What is the use of the A bit? And write a program to copy the content of RAM locations 20-2FH to RAM locations 2D0-2DFH.
8. Write an assembly program that can perform the following multibyte subtractions and addition. (Select the arithmetic's you wish to solve and do at least two from the choices!)
   A, 0x1498 - 0x2056
   B, 0x2198 + 0x4130
9. Write c program to toggle only bit RB0 every 200ms?
10. Generate square wave of 2second on PORTC.0 and at the same time load memory location 20 with literal value 00H and increment the count and send the count to PORTB (Use Timer0interrupt)
11. A clock pulse of 10HZ frequency is connected to Timer0 (pin T0CKI). Write a program to display the counter value on PORTC