INST/VI/App. of Microcontroller-I INST 28/05/15

QP Code : 5082

(3 Hours) **[Total Marks : 80**

N.B: (1) Question No. 1 is compulsory. Attempt any three out of remaining five questions.
(2) All questions carry equal marks.
(3) Assume suitable data if necessary.

1. Answer following in brief : 20
   (a) Write program to configure PORTA, PORTB as input port and PORTC, PORTD as output port for PIC18.
   (b) Interface an LED to pin RB0 of PIC18. Write instructions to toggle LED at regular interval continuously.
   (c) Explain following PIC18 instructions.
   (1) BTFSS (2) MOVFF
   (d) Explain basic features of SPI protocol.
   (e) What is interrupt latency ? What are the factors affecting it ? How it can be reduced.

2. (a) Write PIC18 program to convert BCD number of ASCII number. 10
   (b) Assume that a switch is connected to pin R3O of PIC18. Write a program to get status of the switch and send it in D0 bit of file register location 20H. 10

3. (a) Interface four seven segment LEDS to PIC18, Write a program to display 1234 on them. 10
   (b) Explain ADC module of PIC 18. Write a program to get data from channel 0 of ADC and to display the result on PORTC and PORTD. 10

4. (a) Assume that clock pulses are fed to pin TOCK1 pin. Write a program for counter 0 in 8 bit mode to count the pulses and display the state of TMROL on PORTB. 10
   (b) Explain working of PIC18 external hardware interrupts and SFRs associated with them in detail. 10

5. (a) What is Task scheduling in RTOs? Explain various task scheduling algorithms. 10
   (b) Explain PIC18 serial port in brief. Write a program for PIC18 to transfer the letter 'I' serially at 9600 band. Continuously. Assume XTAL = 10 MHZ. 10

6. Write short notes on any two : 20
   (a) Design metric of embedded system
   (b) PORTB change Interrupt
   (c) CCP Modules of PIC18.

JP-Con. : 11016-15.