T.E (Electrical) Sem-VI CBGS   Q.P. Code : 37275   13/12/18

(3 Hours)   [Total Marks:80]

N.B. (1) Question no.1 is compulsory.
      (2) Attempt any three from the rest.
      (3) Make any suitable assumption wherever required.

Q.1   Answer any four.
  (a) What is timer roll over in PIC 18? What happens after roll over?   5M
  (b) Explain the Status Register of PIC18 Microcontroller.   5M
  (c) Explain the pipelining concept in PIC18 Microcontroller   5M
  (d) What is the difference between interrupt and polling?   5M
  (e) What are the steps taken by the microcontroller when an interrupt is activated?   5M

Q.2 (a) Which are the different addressing modes of PIC18 Microcontroller?   10M
  (b) Explain the memory organization (Program and Data Memory) of PIC18   10M
       Microcontroller.

Q.3 (a) Explain stack and subroutine. Also explain the instructions associated with   10M
       them.
  (b) Write a C18 program to transmit message "YES" serially at 9600 baud rate,   10M
       8 bit data and 1 stop bit. Do this continuously.

Q.4 (a) Explain the following terminology related to PIC18   10M
           1) USART   2) SPBRG
           3) TXSTA   4) RCSTA
  (b) Write an Assembly language program using Timer 0 to generate a square   10M
       wave of 200Hz frequency on Port A pin RA0. Use 16 bit programming
       technique with 64 prescaler. The internal frequency is 10MHz.

Q.5 (a) Explain Global Interrupt Enable (GIE) and Peripheral Interrupt Enable (PEIE)   10M
       concept with appropriate logical diagram. Also explain INTCON register.
  (b) Write an Assembly language program to rotate the stepper Motor by   10M
       monitoring the status of switch connected to pin RC2 and do the following
           (1) If switch = 0, the stepper motor moves clockwise.
           (2) If switch =1, the stepper motor moves anticlockwise.
       Also draw the interfacing diagram.

Q.6   Write a short note on any two
  (a) Seven segment LED interfacing with PIC 18 Microcontroller.   10M
  (b) LCD interfacing with PIC 18 Microcontroller.   10M
  (c) CCP modules of PIC 18 Microcontroller.   10M

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