T.E. Electrical VI - CBGS 01.6.2016

Microcontroller & its Applⁿ. **QP Code :584902**

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

N.B. : (1) Question no. **1** is **compulsory**
(2) Solve any three from the rest.
(3) **Use** suitable assumptions wherever required.
(4) Write neat and clean

1. Attempt **any four** questions.
   (i) Explain features of PIC18 microcontroller. **5**
   (ii) What is timer roll over in PIC 18. What happen after roll over. **5**
   (iii) What is interrupt and polling. **5**
   (iv) What is band rate and RS 232. **5**
   (v) What is TRIS and LAT registers **5**

2. (a) Write at least three instructions of each group and explain with example. **10**
   (b) Write instruction to add four consecutive 8 bit numbers stored in data memory and store the result in the data memory. **10**

3. (a) Explain all the instructions related to stock and subroutine with example. **10**
   (b) Draw the programming block diagram of PIC 18 and explain each block. **10**

4. (a) Explain the significance of FSR. Use FSR to add four 8 bit numbers stored in memory locations 211H, 212H, 213H, 214H. Store the result in location 215H. **10**
   (b) Write instructions to initialize timer 0 of PIC18 for 16 bit operation high to low edge triggered and 1:8 prescalor. **5**
   (c) Explain the significance of timer status register **5**

5. (a) Explain the following terminology related to PIC 18. **10**
      (a) USART (b) Simplex and Duplex
      (c) COMPORT (d) SPBRG
      (e) TXREG and RCREG
   (b) Write assembly level program for microcontroller opperated relay to count maximum 20 times when it is interrupted by interrupt INT0 of PIC 18. microcontroller. **10**

6. (a) Answer **any two** of the following :-
      (a) Draw the interfacing diagram of seven segment LED and explain the programming technique using PIC18 microcontroller. **10**
      (b) Draw the interfacing diagram and write assembly level program to interface keyboard to PIC 18 **10**
      (c) With the help of interfacing diagram and assembly level programming explain the dc moter control using PIC 18. **10**
      (d) Explain parallel data transfer technique. Differential Parallel data transfer with respect to serial data transfer. **10**
