Total No. of Questions : 8] **SEAT No. :**

P3920 **[Total No. of Pages : 2**

[4758] - 540
T.E. (E & TC) (Semester - I)
MICROCONTROLLER APPLICATION

Time : 3 Hours] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of Calculator is allowed.***
5) ***Assume suitable data, if necessary.***

Q1) a) What are different addressing modes of 8051 Microcontroller? Explain giving example. **[6]**

b) What is RISC Microcontroller, how it is different than CISC Microcontroller? **[6]**

c) Explain memory mapping of PIC18F Microcontroller? **[8]**

OR

Q2) a) Explain role of microcontroller in embedded system. **[6]**

b) Explain Interrupt Enable and Interrupt Priority register? **[6]**

c) Draw and Explain PIC18F Microcontroller Architecture. **[8]**

Q3) a) Write a program for 1Khz 10% duty cycle PWM waveform. **[8]**

b) Draw and Explain the interfacing of LCD with Port D and Port E of PIC18Fxxx microcontroller. Write C code to display 'WELCOME'. **[8]**

P.T.O.

OR

Q4) a) Explain different Timer modes and their applications of PIC 18xx in detail. **[8]**

b) Draw and explain the interfacing of LCD in 8-bit mode with PIC18x microcontroller without busy flag. Write C code to display "S.P. Univ. Pune". **[8]**

Q5) a) Draw interfacing diagram and write a algorithm for DC Motor speed controller using PIC18xxx. **[10]**

b) Compare SPI and I2C protocol. **[8]**

OR

Q6) a) Darw interfacing diagram and write a program for I2C based RTC with PIC18Fxxx. **[10]**

b) Draw and Explain MSSP structure of PIC18Fxx. **[8]**

Q7) Design of DAS system for pressure monitoring system (use any suitable sensor). **[16]**

OR

Q8) Design of Digital Multimeter to display values on LCD display. **[16]**