

Total No. of Questions : 8]

SEAT No. :

P3920**[4758] - 540**

[Total No. of Pages : 2

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) Draw 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]

