P3920

[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.

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]**

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