

Total No. of Questions : 8]

SEAT No. :

**P1319**

**[4858] - 1054**

[Total No. of Pages : 2

**T.E. (Electronics Engineering)**  
**MICRO CONTROLLER AND APPLICATIONS**  
**(Semester - II)( End Sem.)**

*[Time : 2:30 Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Answer the Q.1 or Q2. & Q3 or Q4, & Q5 or Q6, & Q7 or Q8.*
- 2) *Answer any four questions.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right side indicate full marks.*
- 5) *Use of calculator is allowed.*
- 6) *Assume Suitable data if necessary.*

- Q1)** a) What is RISC Microcontroller, how it is different than CISC Microcontroller. **[4]**
- b) Explain the operation of I2C protocol with timing diagram. **[8]**
- c) Explain data and program memory of PIC Microcontroller. **[8]**

OR

- Q2)** a) How the priorities of Interrupts can be changed in 8051 Microcontroller? **[4]**
- b) Describe in detail status register of PIC Microcontroller. **[8]**
- c) Describe in detail Assembler, compiler, simulator and Emulator. **[8]**
- Q3)** a) Draw an interfacing diagram and write an Embedded C program to interface 16×2 LCD with PIC 18 FXXX Microcontroller to display the "SPPU PUNE" message **[8]**
- b) What do you mean by prescaling of timer in PIC Microcontroller? Explain timer control register of PIC18 FXXX **[8]**

OR

**P.T.O.**

- Q4)** a) Write an embedded C program to toggle all bits of port B, port C, port D continuously with a delay of 250 ms. [8]
- b) Draw and explain interrupt structure of PIC18 FXXX Microcontroller. [8]

- Q5)** a) Write a Embedded c program for reading single analog input (range 0 to 5V) and display it on LCD. [8]
- b) Explain the MSSP with SPI mode. [8]

OR

- Q6)** a) What are the advantages of SPI bus over I2C bus? Draw the RTC interfacing with PIC 18 FXXX [8]
- b) Compare I2C and SPI protocol with diagram. [8]

- Q7)** a) Draw and explain data acquisition system in detail. [8]
- b) Draw the interfacing of DC motor to PIC18 fxxx using PWM and write ac code for 50% duty cycle if switch is open, 25% duty cycle if switch is closed. [10]

OR

- Q8)** Design a PIC18 FXXX based voltmeter for 0-20V measurement. Write corresponding algorithm to display voltage on LCD [18]

