Total No. of Questions :8]

SEAT No. :

P2865

[Total No. of Pages :2

[4958] - 1054

T. E. (Electronics)

MICROCONTROLLERS AND APPLICATION

(2012 Pattern) (304203)

Time : 2½ Hours] *[Max. Marks :70*

Instructions to the candidates:

1) ***Answer the Q.1 OR Q.2 and Q.3 OR Q.4 and Q.5 OR Q.6 and Q.7 OR Q.8.***
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) Describe in detail. Assembler and compiler and emulator. **[8]**

b) Explain different branch instructions of 8051 microcontroller. **[6]**

c) Write features of PICI 18FXX Microcontroller over PICI6FXXX. **[6]**

OR

Q2) a) What is the role of microcontroller in embedded System? **[4]**

b) Draw and explain port structure of PIC 18FXXX Microcontroller. **[8]**

c) Explain Counter operation in 8051 microcontroller. **[8]**

Q3) a) What is peripheral interrupt, IVT and ISR? Draw and Explain the interrupt structure for the PIC 18FXX microcontroller. **[8]**

b) Write a Embedded C program for blinking LED's interfaced to PORTD of PIC18FXXX. **[8]**

OR

P.T.O.

Q4) a) Draw an interfacing diagram and write an Embedded C program to interface 16×2 LCD with PIC 18FXX Microcontroller to display the "SPPU PUNE" message. Use 4 bit interface mode with busy flag. **[8]**

b) Explain Timer0 control register in details. Also calculate the TMRCON0, TMR0H, TMR0L value to generate 1 second delay using Timer0? Assume that XTAL = 8MHZ. **[8]**

Q5) a) Explain the UART operation in PIC 18FXX with example. **[8]**

b) What are the advantages of SPI BUS over 12C BUS? Draw the RTC interfacing with PIC18FXXX. **[8]**

OR

Q6) a) Explain the 12C protocol with the help of MSSP module used in master mode. **[8]**

b) Write a Embedded C program for reading single analog input (range 0 to 5V) and display it on LCD. **[8]**

Q7) a) Draw interfacing diagram and write a program to read frequency (range 0-500KHz). **[10]**

b) Describe the algorithm for voltmeter with interfacing diagram. **[8]**

OR

Q8) a) Design Speed control of DC motor with the help of variable register as input using a PWM. **[10]**

b) Explain different steps involved in designing of data acquisition system. **[8]**