

Total No. of Questions : 8]

SEAT No. :

**P3921****[4958]-1045**

[Total No. of Pages : 2

**T.E. (E & TC)****MICROCONTROLLER AND APPLICATIONS  
(End-Sem) (Semester - I) (2012 Course) (304183)***Time : 2½ Hours]**[Max. Marks : 70**Instructions to the candidates:*

- 1) *Answer to the two sections should be written in separate answer books.*
- 2) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6 Q7 or Q8.*
- 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) Compare RISC and CISC microcontroller with Example. [6]  
 b) Draw and explain the Flag structure of 8051 with bank 2 selection. [6]  
 c) Explain in detail Data memory MAP of PIC18F with GPR and SFRS. [8]

OR

- Q2)** a) Differentiate between RS232 and RS 485, Comment on serial communication rate. [6]  
 b) Draw and explain the interrupt structure of 8051 in detail. [6]  
 c) Draw and explain the PIC18F architecture in detail. [8]

- Q3)** a) Write a program for 1KHz, 10% duty cycle PWM waveform. [8]  
 b) Draw an interfacing diagram for 4\*4 matrix key board and display the Key pressed on LED write a code. [8]

OR

- Q4)** a) Draw and explain the interfacing of LCD with port D and port E of PIC18XXXL micro controller without Busy flag. Write C code to display 'S.P.P.U Pune'. [8]  
 b) Explain function the port structure of PIC in detail. [8]

***P.T.O.***

- Q5)** a) Explain the MSSP structure of PIC 18F in detail. [8]  
b) Compare the SPI and I2C protocol. [8]

OR

- Q6)** a) What are the features of RTC Draw an interfacing diagram to interface with PIC. [8]  
b) Draw an interfacing of temp Sensor to PIC using Serial ADC and indicate excess temp when exceed the set point by LED. [8]

- Q7)** a) Design a frequency counter for counting number of pulses and display same on LCD. [10]  
b) Draw an interfacing diagram and write a algorithm for DC motor speed control using PIC. [8]

OR

- Q8)** a) Design of DAS system for pressure monitoring system [use any suitable sensor]. [www.sppuonline.com](http://www.sppuonline.com) [10]  
b) State and explain with generalized Data acquisition system. [8]

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