



[4658] – 565

Seat No.	
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**T.E. (E & TC) (Semester – I) Examination, 2014
MICROCONTROLLER AND APPLICATIONS
(2012 Pattern)**

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) *Neat diagrams must be drawn wherever necessary.*
2) *Figures to the right indicate full marks.*
3) *Assume suitable data, if necessary.*

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|---|---|
| 1. a) Write a short note on RS232 protocol. | 6 |
| b) Explain the Timer Mode 2 of 8051. | 6 |
| c) Draw and explain the Data Memory map of PIC18fxx series. | 8 |

OR

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|--|---|
| 2. a) Write short note on : | 6 |
| a) Assembler | |
| b) Compiler. | |
| b) Explain the addressing modes of 8051 with example. | 6 |
| c) Explain the BOD and Power Down modes of PIC18FXXX. | 8 |
| 3. a) Explain PIC18FXXX port structure. | 8 |
| b) Draw and explain the interfacing of LED with Port D of PIC18FXXX microcontroller.
Write C code to blink LED with 1 Sec. delay. | 8 |

OR

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| 4. a) Explain different Timer modes and their applications of PIC18XX 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 |

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5. a) Draw and explain the interfacing of ADC for analog input 0-5 V and write a C code. **10**
b) Draw and explain 12C protocol of PIC18FXX. **8**

OR

6. a) Draw interfacing diagram and write a program for 12C based RTC with PIC18FXXX. **10**
b) Draw and explain MSSP structure of PIC18FXX. **8**

7. Design of DAS system for temperature monitoring system (use LM 35 temperature sensor). **16**

OR

8. Design the frequency counter to display frequency on LCD display. **16**

B/II/14/